STATE OF CALIFORNIA EDMUND G. BROWN JR., *Governor*

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

F I L E D
08-14-12
01:37 PM

August 14, 2012

Agenda ID #11528
Ratesetting

TO PARTIES OF RECORD IN RULEMAKING 11-09-011

This is the proposed decision of Administrative Law Judge Regina DeAngelis. It will not appear on the Commission's agenda sooner than 30 days from the date it is mailed. The Commission may act then, or it may postpone action until later.

When the Commission acts on the proposed decision, it may adopt all or part of it as written, amend or modify it, or set it aside and prepare its own decision. Only when the Commission acts does the decision become binding on the parties.

Parties to the proceeding may file comments on the proposed decision as provided in Article 14 of the Commission's Rules of Practice and Procedure (Rules), accessible on the Commission's website at www.cpuc.ca.gov. Pursuant to Rule 14.3, opening comments shall not exceed 15 pages.

Comments must be filed pursuant to Rule 1.13 either electronically or in hard copy. Comments should be served on parties to this proceeding in accordance with Rules 1.9 and 1.10. Electronic and hard copies of comments should be sent to ALJ DeAngelis at rmd@cpuc.ca.gov and the assigned Commissioner. The current service list for this proceeding is available on the Commission's website at www.cpuc.ca.gov.

/s/ KAREN V. CLOPTON
Karen V. Clopton, Chief
Administrative Law Judge

KVC:sbf

Attachment

Decision **PROPOSED DECISION OF ALJ DEANGELIS** (Mailed 8/14/2012)

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources.	Rulemaking 11-09-011 (Filed September 22, 2011)

DECISION ADOPTING SETTLEMENT AGREEMENT REVISING DISTRIBUTION LEVEL INTERCONNECTION RULES AND REGULATIONS – ELECTRIC TARIFF RULE 21 AND GRANTING MOTIONS TO ADOPT THE UTILITIES' RULE 21 TRANSITION PLANS

TABLE OF CONTENTS

Title Page

DECISION ADOPTING SETTLEMENT AGREEMENT REVISING DISTRIBUTION LEVEL INTERCONNECTION RULES AND REGULATIONS – ELECTRIC TARIFF RULE 21 AND GRANTING MOTIONS TO ADOPT THE UTILITIES' RULE 21 TRANSITION PLANS 1
1. Summary 2
2. Background 4
2.1. The Proceeding 4
2.2. The March 16, 2012 Proposed Settlement 6
2.3. Electric Tariff Rule 21 8
2.4. The Commission's Distributed Generation Programs 12
2.5. The Role of Rule 21 In Serving the Commission's Distributed Generation Programs 15
3. Components of the Proposed Settlement 17
4. Standard of Review of Settlements 19
5. Analysis of the Proposed Settlement 20
5.1. The Proposed Settlement Is Reasonable In Light of the Record 20
5.2. The Proposed Settlement is Consistent With Law 26
5.2.1. Addressing Interconnection Under the Net Energy Metering Program is Consistent With Law 26
5.2.2. Addressing Interconnection Under the Renewable Feed-In Tariff Program is Consistent With Law 27
5.2.3. Addressing Interconnection Under the Efficient Combined Heat and Power Feed-In Tariff Program is Consistent With Law 29
5.2.4. Addressing Interconnection by Qualifying Facilities of 20 MW or Less is Consistent With Law 31
5.3. The Proposed Settlement is in the Public Interest 31
5.3.1. Supporting State and Federal Energy Policy is in the Public Interest 32
5.3.2. Seeking FERC Approval for Conforming Changes to Federal Wholesale Tariffs is in the Public Interest 36
5.3.3. The Recommendation for Commission Staff Oversight of Utility Compliance with the Revised Rule 21 is in the Public Interest 36

TABLE OF CONTENTS
CONT'D

Title Page

5.3.4. The Recommendation to Include Certain Issues in Phase 2 is in the Public Interest 38
6. Opposition by DRA 39
7. Comments by Parties 42
8. Motions to Adopt Utilities' Rule 21 Transition Plans - Granted 43
8.1. PG&E's Transition Plan 44
8.2. SCE's Transition Plan 46
8.3. SDG&E's Transition Plan 51
8.4. Silverado Power's Comments 53
9. Comments on Proposed Decision 57
10. Assignment of Proceeding 57
Findings of Fact 57
Conclusions of Law 59
ORDER 61

ATTACHMENT A – Motion for Approval of Settlement Agreement Revising Distribution Level Interconnection Rules and Regulation (including all Attachments)
ATTACHMENT B – Motion of PG&E to Adopt Transition Plan (with Plan Attached)
ATTACHMENT C – Motion of SCE to Adopt Transition Plan (with Plan Attached)
ATTACHMENT D – Motion of SDG&E Concerning Transition Plan (with Plan Attached)
ATTACHMENT E – Presently Effective Rule 21 of SCE (as of Date of this Decision)

DECISION ADOPTING SETTLEMENT AGREEMENT REVISING DISTRIBUTION LEVEL INTERCONNECTION RULES AND REGULATIONS – ELECTRIC TARIFF RULE 21 AND GRANTING MOTIONS TO ADOPT THE UTILITIES' RULE 21 TRANSITION PLANS

1. Summary

Today's decision adopts in full a settlement that presents, among other things, a fundamentally reformed Electric Tariff Rule 21. Rule 21 governs the interconnection by electric generating facilities to the distribution systems of Pacific Gas and Electric Company (PG&E), Southern California Electric Company (SCE), and San Diego Gas & Electric Company (SDG&E). The settlement was submitted to the Commission on March 16, 2012 by fourteen parties following eight months of negotiations in a *Motion for Approval of Settlement Agreement Revising Distribution Level Interconnection Rules and Regulations* (Motion).[1] In approving the settlement (Proposed Settlement) at

[1] Attachment A to this decision is the complete Motion with all its attachments. The Motion includes a number of documents, such as, Appendix A, Summary of the Proposed Rule 21 Revised Tariff. The Motion also attaches (but does not numerically or otherwise identify) the Proposed Settlement executed by fourteen parties. Appended to the Proposed Settlement at Attachment A are the following additional documents: (1) the revised Rule 21 Tariff (Attachment A-1), (2) separate Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process for PG&E, SCE, and SDG&E (Attachments A-2, A-4, and A-6 to the Proposed Settlement) (referred to jointly herein as Proposed Interconnection Agreement), and (3) separate Rule 21 Exporting Generating Facility Interconnection Request for PG&E, SCE, and SDG&E (Attachments A-3, A-5, and A-7 to the Proposed Settlement) (referred to jointly herein as Proposed Inteconnection Request). Attachment B to the Motion is a document entitled, Recommended Scope of Phase 2 Issues. Attachment C to the Motion is a document entitled, Minimum Engineering Data to be Included in the Reporting Proposal.

Attachment A, we adopt the first fundamental redesign of Rule 21 (Revised Rule 21) since 2000.

We find that the Proposed Settlement meets established criteria for approval of settlements by the Commission. The settlement is reasonable in light of the record, consistent with the law, and in the public interest. Specifically, the Proposed Settlement is reasonable in light of the record as it accomplishes a number of critical goals of this rulemaking by addressing policy and technical issues essential to timely, predictable and transparent interconnection to the distribution system. The Proposed Settlement is consistent with the law as it establishes interconnection rules that will support the success of existing renewable distributed generation programs created by the Legislature and implemented by this Commission, including, but not limited to, the Net Energy Metering Program (Pub. Util. Code § 2827) and the Renewable Feed-In Tariff Program (Pub. Util. Code § 399.20). The Proposed Settlement is in the public interest as it is the result of compromise and agreement among a wide range of industry and ratepayer representatives and responds to the needs of today's distributed generation market.

The Proposed Settlement is opposed by one party, the Commission's Division of Ratepayer Advocates (DRA), on the basis that ratepayers may be required under the Proposed Settlement to reimburse generators for triggered transmission network upgrades as governed by the utilities' federal wholesale tariff with reference to the California Independent System Operator Tariff. We address DRA's objections herein and decline to modify the Proposed Settlement on the basis of this protest.

To implement the Revised Rule 21, PG&E, SCE, and SDG&E shall file Tier 1 Advice Letters within seven days, effective the day filed, with tariff sheets reflecting the revisions to Rule 21 as set out in the Proposed Settlement.

Today's decision also adopts transition plans so that each utility has a process in place to transition, as warranted, pending interconnection requests to the new provisions of Rule 21.

This matter was submitted on July 26, 2012 with the issuance of a ruling incorporating evidence into the record. This proceeding remains open.

2. Background

2.1. The Proceeding

The Commission initiated Rulemaking (R.) 11-09-011 on September 22, 2011 to review and, if necessary, revise the rules and regulations governing interconnecting generation and storage resources to the electric distribution systems of Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE) and San Diego Gas & Electric Company (SDG&E).[2] The utilities' rules and regulations pertaining to the interconnection of generation are generally set forth in Electric Tariff Rule 21. The rulemaking and the June 20, 2012 *Assigned Commissioner's Scoping Memo and Ruling* for phase 1 identified the following issues, among others, to address:[3]

(1) Define the appropriate interconnection study process for all types of generation resources seeking interconnection to the distribution system;

---

[2] R.11-09-011 at 2.

[3] R.11-09-011 at 5-6 and June 20, 2012 *Assigned Commissioner's Scoping Memo and Ruling* at 3-4.

(2) Create distribution-level interconnection procedures for storage technologies;

(3) Evaluate and determine appropriate processes for establishing distribution-level interconnection queues (serial or cluster);

(4) Establish data and reporting requirements;

(5) Evaluate the need to revise technical operating standards due to advances in technology, communications, and the potential need for the system operator to control these systems;

(6) Define distinct engineering methodologies based on the characteristics of the resource, such as the resource's impact on the transmission system;

(7) Establish a path to resource adequacy qualification for resources that have certain characteristics; and

(8) Review and modify, if necessary, the screening mechanism that limits an expedited interconnection to fifteen percent of a line section's peak load.

In addition, when addressing the preliminary scope of the proceeding under Rule 7.1 of the Commission's Rules of Practice and Procedure, the Commission stated that "this rulemaking may be used by the Commission as the procedural forum for the recently initiated settlement efforts to address matters related to Rule 21."

The settlement discussions began in August 2011, a few weeks prior to issuance of the rulemaking, and established a process to revise Rule 21 to accommodate the interconnection of a specific type of generator, namely, exporting generating facilities. At the conclusion of the settlement discussions, on February 16, 2012, parties entered into the Proposed Settlement and requested

the Commission to consider a potential motion by parties to adopt the Proposed Settlement at the prehearing conference (PHC) held on February 17, 2012.[4] The assigned Administrative Law Judge (ALJ) found the parties' request reasonable and suggested that parties file a motion seeking Commission approval of any settlement emerging from the settlement discussions. Additional background on the settlement process and the terms of the Proposed Settlement are set forth below. This matter was submitted on July 26, 2012, at which time the ALJ issued a ruling incorporating materials related to the April and August 2011 workshops into the record. (*See* Ruling Paragraph 2.)

This proceeding remains open for phase 2. A phase 2 scoping memo will be issued shortly.

2.2. The March 16, 2012 Proposed Settlement

Commission Staff and the participants in the Rule 21 Working Group initiated settlement discussions in August 2011. The Rule 21 Working Group is an ad hoc group with open participation. When the group was formed several years ago, it was led by the California Energy Commission and established to facilitate collaboration on matters related to Rule 21. The Rule 21 Working Group has served as an important resource in the Commission's past revisions of Rule 21 that resulted in the screen-based design[5] adopted by the Commission in

---

[4] Reporter's Transcript February 16, 2012 PHC.

[5] A "screen-based" design refers to the structure of the review process undertaken by the utility when presented with a generator's interconnection request and functions as a standardized checklist used by the utility to evaluate whether the generator's interconnection application is complete. One of the goals of the screens is to identify if the interconnection request can be approved for interconnection without the need to engage in additional study or analysis.

2000 and has provided follow-up monitoring and ongoing suggestions for improvement of the tariff.[6]

Prior to the initiation of settlement discussions, the Commission held several workshops with the Rule 21 Working Group. These workshops were held in April 2011 and August 2011 and participants sought to determine whether a need existed for Rule 21 reform. These workshops brought together a wide range of industry participants in discussions that ultimately resulted in the Proposed Settlement we consider today.

The settlement discussions conformed to Rule 12 of the Commission's Rules of Practice and Procedure. The Commission Staff sent notice of the settlement discussions to existing and prior Commission proceedings that addressed interconnection to the electric grid, including R.10-05-004,[7] R.11-05-005,[8] R.08-08-009,[9] R.08-06-024,[10] and Application (A.) 08-11-001.[11] Notice

---

[6] *See* Decision (D.) 00-12-037, *Decision Adopting Interconnection Standards* at 10 (adopting the California Energy Commission and Rule 21 Working Group recommendation for eight-screen design and creating a "post-implementation working group" to monitor the effectiveness of Rule 21 provisions); D.05-08-013, *Interim Opinion Adopting Changes in Interconnection Rules for Distributed Generation* (reviewing changes to Rule 21 recommended by Rule 21 Working Group).

[7] R.10-05-004, *Order Instituting Rulemaking Regarding Policies, Procedures and Rules for the California Solar Initiative, the Self-Generation Incentive Program and Other Distributed Generation Issues* (issued May 6, 2010).

[8] R.11-05-005, *Order Instituting Rulemaking to Continue Implementation and Administration of California Renewables Portfolio Standard Program* (issued May 5, 2011).

[9] R.08-08-009, *Order Instituting Rulemaking to Continue Implementation and Administration of California Renewables Portfolio Standard Program* (issued August 21, 2008). R.08-08-009 is the predecessor rulemaking to R.11-05-005.

[10] R.08-06-024, *Order Instituting Rulemaking on the Commission's Own Motion into Combined Heat and Power Pursuant to Assembly Bill 1613* (issued June 26, 2008).

was provided on this broad level because interconnection impacts different energy industries. The settlement discussions were open to any entity with an interest in distribution level interconnection issues.[12]

In addition to Commission Staff, the settlement discussions included the parties signing the Proposed Settlement: PG&E, SCE, and SDG&E; Aloha Systems Incorporated, California Farm Bureau Federation, Center For Energy Efficiency and Renewable Technologies, Clean Coalition, Interstate Renewable Energy Council Inc., Sierra Club, Solar Energy Industries Association, SunEdison, Sunlight Partners, Sustainable Conservation, and The Vote Solar Initiative (collectively, Joint Settlement Parties). The settlement discussions also included participation by a number of other entities and government agencies. These included the Division of Ratepayer Advocates (DRA), the California Energy Commission, the California Independent System Operator (CAISO), numerous developers of distributed generation, including renewable, combined heat and power and storage systems, and advocacy groups supporting different segments of the distributed generation market, including renewables, storage, and combined heat and power. Overall, a total of 81 entities participated.

2.3. Electric Tariff Rule 21

The Commission's first iteration of Rule 21 was adopted in 1982.[13] As initially adopted, Rule 21 was designed to meet the needs of the small,

---

[11] A.08-11-011, *Application of Southern California Edison Company (U338E) for Applying the Market Index Formula and As-Available Capacity Prices adopted in D.07-09-040 to Calculate Short-Run Avoided Cost for Payments to Qualifying Facilities Beginning July 2003 and Associated Relief* (issued November 4, 2008).

[12] R.11-09-011 at Attachment D (*Notice of Rule 21 Settlement Efforts).*

non-utility-owned generating facilities, namely QFs,[14] which included renewable, non-renewable, and cogeneration plants as defined by the Public Utility Regulatory Policies Act (PURPA).[15]

The Commission revisited Rule 21 again in 1999. At that time, the Commission initiated a rulemaking with the intention of setting out a procedural roadmap to support the development of distributed energy resource or distributed generation.[16] As part of this effort, the Commission, working collaboratively with the California Energy Commission, undertook a redesign of Rule 21 to establish a more standardized and transparent engineering analysis

---

[13] D.82-01-103, *Commission Rules Regarding Electric Utility Purchases of Electric Power from Cogeneration and Small Production Facilities,* at Ordering Paragraph 21 ("Each utility shall file with its standard offer interim parallel generation tariffs which specify interconnection reliability and safety requirements. These tariffs shall incorporate the functional standards adopted in this decision. The tariffs shall specify separate guidelines for qualifying facilities (QFs) below 100 kilowatts (kW), between 100 kW and 1 megawatt (MW), and above 1 MW.") *See also* D.83-10-093 ("As explained in D.82-01-103…this Commission was given the authority under Federal Energy Regulatory Commission (FERC) regulation Section 292.308 to establish reasonable standards to ensure system safety and reliability of the interconnected operations between the QF and the utility.")

[14] 16 U.S.C. § 796, *et seq.,* 18 C.F.R § 292.203, *et seq.,* (defining "QF").

[15] PURPA is codified in scattered sections of 16 U.S.C., including § 796, § 824a-3 and §§ 2601, *et seq.*

[16] R.99-10-025, *Order Instituting Rulemaking Into Distributed Generation* (issued October 21, 1999); *see also* R.99-10-025 scoping memo at 1 (January 20, 2000) (procedural roadmap to support distributed generation to include interconnection standards; ownership and control distributed generation; distribution center system planning, maintenance and operation; valuation of distributed generation and net metering; consumer education and outreach to governmental entities; rate design and stranded costs; distribution wheeling; and streamlining of the California Environmental Quality Act Review process).

for the interconnection of distributed generation.[17] At that time, the focus of the Commission and the California Energy Commission was to enhance the efficiency of the interconnection process for the types of distributed generation programs then being created, specifically, generation to offset on-site load.[18] On that basis, the Rule 21 adopted at that time included, among other things, a set of eight "screens" which functioned as a checklist that the utility's interconnection engineer used to determine whether the generator may interconnect without further review by the Utility.[19]

---

[17] D.00-11-001, *Interim Decision Adopting Interconnection Standards* and D.00-12-037, *Decision Adopting Interconnection Standards.*

[18] D.00-12-037, *Decision Adopting Interconnection Standards* at 16. In 2000, the distributed generation programs included net energy metering set forth in Pub. Util. Code §§ 2827 *et seq.* (Senate Bill 656, Stats. 1995, ch. 360), the Self-Generation Incentive Program which was added to Pub. Util. Code § 372 (added by Assembly Bill 970, Stats. 2000. ch. 854), and the Emerging Renewables Program added by Pub. Util. Code § 381 (added by Assembly Bill 1890, Stats. 1996, ch. 854 and Senate Bill 90, Stats. 1997, ch. 905). QFs authorized by PURPA in 1978 were designed to offset on-site load and to sell any excess power to the host utility at avoided cost. Subsequent decisions addressing portions of Rule 21 include D.01-07-027, *Interim Decision Adopting Standby Rate Design Policies,* issued July 12, 2001 in R.99-10-025, *Order Instituting Rulemaking on Distributed Generation;* D.02-03-057, *Opinion Interpreting Public Utilities Code Section 2827,* issued March 21, 2002 also in R.99-10-025; D.05-08-013, *Interim Opinion Adopting Changes in Interconnection Rules for Distributed Generation,* issued on August 25, 2005 in R.04-03-017, *Order Instituting Rulemaking Regarding Policies, Procedures and Incentives for Distributed Generation and Distributed Energy Resources.*

[19] D.00-12-037, *Decision Adopting Interconnection Standards,* Attachment A, Sec. 3.1.3; *see also* Attachment E, presently effective Rule 21, Section I. Attachment E hereto is the presently effective Rule 21 for SCE. The three largest electric utilities, PG&E, SCE, and SDG&E, each maintain their own Rule 21 and post updated tariff sheets on their respective websites. The utilities have been required by the Commission to maintain substantial uniformity in their Rule 21 tariffs. As such, section references to the presently effective Rule 21 in this decision could refer to any of the three utilities' tariffs

Footnote continued on next page

Under the presently effective Rule 21, the upfront screening process is still in place and has become known as "Initial Review." The eight screens of Initial Review were designed to permit the utility engineer to quickly identify, among other factors, whether a generating facility is configured to remain within certain technical limits, such as power output, aggregate generating capacity on a line section, starting voltage drop, or short circuit current contribution.[20]

The presently effective Rule 21 has successfully facilitated the interconnection of tens of thousands of net energy metered and non-exporting generation facilities.[21] However, generators seeking to *export* a portion or all of their generation to the utility's distribution system lack a straightforward means of interconnecting under the presently effective Rule 21.[22]

Specifically, when an interconnection applicant fails to pass Initial Review, the presently effective Rule 21 requires the applicant to undertake "Supplemental Review" and/or additional detailed engineering studies.[23] The presently effective Rule 21 does not define the parameters or the timeline for Supplemental Review or additional detailed engineering study.[24] As discussed further below, over time this lack of definition began to negatively impact the

---

but specifically refer to SCE's tariff. Any substantive differences among the tariff provisions of the three utilities are unlikely and will be noted.

[20] These eight screens are set out in a flowchart at Section I of Attachment E, the presently effective Rule 21.

[21] R.11-09-011 at 4.

[22] R.11-09-011 at 5.

[23] D.00-12-037, *Decision Adopting Interconnection Standards* at Att. A (Section 3.1.4); *see also* Attachment E, the presently effective Rule 21 at Section C.1.d.

interconnection process even as the Legislature and the Commission were creating new opportunities within California's distributed generation market.

2.4. The Commission's Distributed Generation Programs

Supporting the growth of distributed generation is a longstanding policy goal of the Commission and the Legislature.[25] Under the direction of the Legislature and on our own initiative, the Commission has implemented the following distributed generation programs:

- The California Solar Initiative[26]
- The Self-Generation Incentive Program[27]
- Net Energy Metering[28]
- Virtual Net Energy Metering[29]

---

[24] *See, e.g.,* Attachment E, presently effective Rule 21 at Section H (defining Supplemental Review and Interconnection Study).

[25] *See, e.g.,* Pub. Util. Code § 372 (Assembly Bill 970, Stats. 2000, ch. 329) (promoting investment in distributed generation as a form of new, environmentally superior electricity generation to relieve California's electricity supply constraints).

[26] Pub. Util. Code §§ 2851 *et seq.,* (added by Senate Bill, 1 Stats. 2006, ch. 132) with ongoing implementation in R.10-05-004, *Order Instituting Rulemaking Regarding Policies, Procedures and Rules for the California Solar Initiative, the Self-Generation Incentive Program and Other Distributed Generation Issues.*

[27] Pub. Util. Code §§ 379.6 *et seq.,* (added by Assembly Bill 1110, Stats. 2009, ch. 508) with ongoing implementation in R.10-05-004, *Order Instituting Rulemaking Regarding Policies, Procedures and Rules for the California Solar Initiative, the Self-Generation Incentive Program and Other Distributed Generation Issues.*

[28] Pub. Util. Code §§ 2827, *et seq.,* (Senate Bill 656, Stats. 1995, ch 360) with ongoing implementation within R.10-05-004, *Order Instituting Rulemaking Regarding Policies, Procedures and Rules for the California Solar Initiative, the Self-Generation Incentive Program and Other Distributed Generation issues.*

[29] The Virtual Net Metering Program was created on the Commission's own motion in D.11-07-031, *California Solar Initiative Phase One Modifications; see also,* Resolution E-4481 (April 19, 2012) (implementing Virtual Net Metering Program). Ongoing

Footnote continued on next page

- The Renewable Feed-In Tariff Program[30]
- The Efficient Combined Heat and Power (CHP) Tariff Program[31]
- The Investor Owned Utilities' Solar Photovoltaic (PV) Program (IOU Solar PV Program)[32]
- QFs of less than 20 megawatts (MW)[33]
- The Renewable Auction Mechanism (commonly referred to as RAM)[34]

---

implementation of the Virtual Net Energy Metering program occurs within R.10-05-044, *Order Instituting Rulemaking Regarding Policies, Procedures and Rules for the California Solar Initiative, the Self-Generation Incentive Program and Other Distributed Generation Issues.*

[30] Pub Util. Code §§ 399.20 *et seq.,* (added by Assembly Bill 1969, Stats. 2006, ch. 731) with ongoing implementation in R.11-05-005, *Order Instituting Rulemaking to Continue Implementation and Administration of California Renewables Portfolio Standard Program.*

[31] Pub. Util. Code §§ 399.20 *et seq.,* (added by Assembly Bill 1613, Stats. 2007, ch. 713) The Commission's Implemented this program in R.08-06-024.

[32] The IOU Solar PV Program was created on the Commission's own motion and the Commission implemented the program in separate application proceedings for each utility. The decisions implementing the program (and the application number) for each utility include: D.09-06-049, *Decision Addressing a Solar Photovoltaic Program for Southern California Edison Company,* issued June 18, 2009 in A.08-03-015; D.10-04-052, *Decision Adopting a Solar Photovoltaic Program for Pacific Gas and Electric Company,* issued April 22, 2010 in A.09-02-029; D.10-09-016, *Decision Adopting a Solar Photovoltaic Program for San Diego Gas & Electric Company,* issued September 2, 2010 in A.08-07-017.

[33] QFs are authorized by federal law. (*See* 16 U.S.C. § 796, *et seq.;* 18 C.F.R. § 292.203 *et seq.)* This Commission approved a multi-party settlement addressing numerous issues related to QFs in D.10-12-035, *Decision Adopting Proposed Settlement,* issued within A.08-11-011, *Application of Southern California Edison Company (U338E) for Applying the Market Index Formula and As-Available Capacity Prices Adopted in D.07-09-040 to Calculate Short-Run Avoided Cost for Payments to Qualifying Facilities Beginning July 2003 and Associated Relief* (filed on November 4, 2008).

[34] The Renewable Auction Mechanism was created on this Commission's own motion in D.10-12-048, *Decision Adopting the Renewable Auction Mechanism,* issued December 16, 2010 in R.08-08-009 (*Order Instituting Rulemaking to Continue Implementation and*

Footnote continued on next page

Depending on the specific commercial arrangements and the Commission decisions authorizing each program, the interconnection tariff relied upon by generators and utilities may be either Rule 21 or the utilities' federal wholesale tariffs.[35] The Commission has acknowledged its interest in ensuring the success of the new distributed generation programs by not foreclosing interconnection options under either the state or federal rules.[36] As a result, a patchwork approach has developed with the application of Rule 21 to the Commission's distributed generation programs.[37] In some instances, the interconnection applicants or the utilities rely upon Rule 21 and in other instances they rely upon federal wholesale tariffs.

While this patchwork approach represented a reasonable response to jurisdictional ambiguities and the goal of program success at the time the Commission launched each new distributed generation program, today the

---

Administration of California Renewable Portfolio Standard Program), filed August 21, 2008 (predecessor proceeding to R.11-05-005). Ongoing implementation of the Renewable Auction Mechanism occurs within R.11-05-005.

[35] These tariffs include SCE's Wholesale Distribution Access Tariff, PG&E's Wholesale Distribution Tariff, and SDG&E's Wholesale Distribution Access Tariff.

[36] *See, e.g.,* D.07-07-027, *Opinion Adopting Tariffs and Standard Contracts for Water, Wastewater and Other Customers to Sell Electricity Generated from RPS-Eligible Renewable Resources to Electrical Corporations* at 41 (permitting utilities to identify preferred interconnection tariff for Renewable Feed-In Tariff with a goal of ensuring program success) (issued July 26, 2007 in R.06-05-027, *Order Instituting Rulemaking to Continue Implementation and Administration of California Renewables Portfolio Standard Program). See also* Resolution E-4299 at 11 (approving interim use of federal tariff for interconnection of independent power producers in SCE's IOU Solar PV Program) (issued January 21, 2010).

[37] For example, at present, participants in the Renewable Feed-In Tariff Program are interconnected under the presently effective Rule 21 in SCE's service territory and the federal wholesale tariffs in PG&E's and SDG&E's service territory.

approach results in uncertainty, lack of transparency, and the risk of differential treatment of otherwise similarly situated developers of distributed generation. These circumstances are contributing factors to the need for reform of Rule 21 and, recently, to our expressed commitment to review how Rule 21 applies to the Commission's various distributed generation programs.[38]

In adopting the Proposed Settlement today, we take an important first step in this review by approving a Revised Rule 21 that better serves the full range of today's distributed generation programs, including, in particular, generating facilities exporting power for sale to the host utility. Upon the effective date of the Revised Rule 21, we intend to address the issue of the applicability of Rule 21 to specific Commission distributed generation programs.

2.5. The Role of Rule 21 In Serving the Commission's Distributed Generation Programs

From approximately 2000 to the present, at least 117,500 solar PV generating facilities serving on-site load have interconnected to the electric grid, representing 1,208 MW of distributed generation.[39] The vast majority were interconnected through the eight-screen Initial Review process within the presently effective Rule 21. However, as the Commission's distributed

---

[38] *See, e.g.,* D.12-05-035, *Decision Revising Feed-In Tariff Program, Implementing Amendments to Public Utilities Code Section 399.20 Enacted by Senate Bill 380, Senate Bill 32, and Senate Bill 2 IX and Denying Petitions for Modification of Decision 07-07-027 By Sustainable Conservation and Solutions for Utilities, Inc.* at 98 (issued May 24, 2012 in R.11-05-005) and Resolution E-4299 at 8 (fn 12) and 12 (recommending revisit of appropriate interconnection protocol for independent power procedures within IOU Solar PV Program following program launch) (issued January 21, 2010).

[39] As of July 2, 2012; *see* California Solar Statistics available at http://www.californiasolarstatistics.ca.gov/.

generation programs expanded and diversified, problems with the presently effective Rule 21 became apparent. For example, with the implementation of the Commission's Renewable Feed-In Tariff Program and Efficient CHP Feed-In Tariff Program, utilities received an influx of interconnection applications from exporting generating facilities. Under the presently effective Rule 21, these exporting generators automatically fail screen 2 of the Initial Review process, which asks whether power will be exported across the point of common coupling.[40] Further, as exporting generating facilities designed to export greater amounts of power have applied for interconnection under the presently effective Rule 21, more individual applicants began failing screen 4, which sets accepted penetration levels of aggregate generating capacity on a given line segment at 15% of the line segment's peak load.[41]

Once an applicant fails any screen, the presently effective Rule 21 requires additional review but offers little guidance for either the utility or the applicant regarding the process for conducting Supplemental Review and/or a detailed interconnection study. With the understanding that increasing numbers of exporting generators may need to use Rule 21 to interconnect, market participants began to raise concerns with the presently effective Rule 21 as it became increasingly apparent that both procedural and technical issues relating Rule 21 needed to be resolved to support the continued growth of the distributed generation market.

---

[40] *See* Attachment E, presently effective Rule 21 at Section I.3.b. The point of common coupling means, generally, the transfer point for electricity between the electrical conductors of the utility and those of the generating facility.

[41] *See* Attachment E, presently effective Rule 21 at Section I.3.d.

In reviewing the Proposed Settlement, we sought to ensure that the Revised Rule 21 addresses these procedural and technical issues so that the Commission's distributed generation programs are supported by the interconnection tariff. We further sought to ensure that the terms and conditions of the Revised Rule 21 cause no ratepayer impact beyond that already contemplated within statutes or Commission decisions establishing the existing distributed generation programs.

3. Components of the Proposed Settlement

The Joint Settlement Parties set forth four components of the Proposed Settlement, including: (1) Revised Rule 21 and the related standardized forms (Proposed Interconnection Request and Proposed Generator Interconnection Agreement), (2) the Joint Settlement Parties' statement of recommended issues for phase 2 of this proceeding, (3) a statement of the utilities' agreement to seek FERC approval, as needed, for conforming changes to their federal wholesale tariffs, and (4) a statement of the Joint Settlement Parties' proposals pertaining to Commission Staff's ongoing oversight of Rule 21. Each component of the Proposed Settlement is addressed below as part of our analysis of the Proposed Settlement under the law. These documents are attached at Attachment A.

The first component of the Proposed Settlement includes the Joint Settlement Parties' request that the Commission expeditiously adopt the Revised Rule 21 and related forms without modification.[42] The Joint Settlement Parties acknowledge that the utilities may need to update Revised Rule 21 or the related standardized forms in the normal course of business and pursuant to

[42] Attachment A, Motion at Proposed Settlement, Section II.A.

Commission rules, regulations, and decisions, and that the Proposed Settlement does not prohibit such changes.[43]

The second component of the Proposed Settlement sets out the Joint Settlement Parties' recommended scope of phase 2 in this proceeding.[44] It also addresses various near-term process matters, such as requesting that phase 2 of R.11-09-011 be initiated as soon as possible and conclude within nine months of commencement.[45]

The third component of the Proposed Settlement acknowledges that certain coordination between state and federal regulatory approvals may be required. The Joint Settlement Parties agree to refrain from objecting to the utilities' FERC filings, if any, that may be required to conform the respective federal wholesale tariffs with the Revised Rule 21.[46]

The fourth component of the Proposed Settlement sets out three accountability mechanisms to ensure utility compliance with, among other things, new timelines for interconnection in Revised Rule 21: (1) an ombudsman to represent the three utilities and assist with resolving disputes over missed deadlines; (2) a proposal for training of the Commission's Consumer Affairs Branch, the division of the Commission responsible for, among other things, educating the public concerning the Commission's processes, on the new timelines established in the Revised Rule 21; and (3) a proposal for a commitment by the Commission's ALJ Division to expeditiously respond to

---

[43] Attachment A, Motion at Proposed Settlement, Section II.I.

[44] Attachment A, Motion at Proposed Settlement, Section II.D and Attachment B.

[45] Attachment A, Motion at Proposed Settlement, Section II.C.

[46] Attachment A, Motion at Proposed Settlement, Section II.F.

requests for mediation of Rule 21 deadline-related disputes within its established Alternative Dispute Resolution Program.[47] The Joint Settlement Parties also recommend certain data to be included in the proposal related to utility reporting on overall compliance with the modified tariff provisions.[48]

Regarding these four components, the Joint Settlement Parties state that all components of the Proposed Settlement are reasonable, consistent with the law, and in the public interest, and that the Commission should adopt the Proposed Settlement in full.[49]

4. Standard of Review of Settlements

Rule 12.1(d) of the Commission's Rules of Practice and Procedure provides that the "Commission will not approve settlements, whether contested or uncontested, unless the settlement is reasonable in light of the whole record, consistent with law, and in the public interest."

The Commission needs to be assured that parties to a settlement were able to make informed choices in the settlement process. With respect to whether a settlement agreement is consistent with the law, the Commission must be assured that no term of the settlement agreement contravenes statutory provisions or prior Commission decisions. A settlement that implements or promotes state and Commission policy goals embodied in statutes or Commission decisions would be consistent with the law. To determine whether a settlement agreement is in the public interest, in addition to substantive public

---

[47] Attachment A, Motion at Proposed Settlement, Section II.G and Attachment C.

[48] Attachment A, Motion Proposed Settlement, Section II.G.

[49] Attachment A, Motion at Proposed Settlement, Section III.C.

interest concerns associated with the circumstances of a particular proceeding, the Commission may inquire into whether a settlement expeditiously resolves issues that otherwise would have been litigated.

We analyze the Proposed Settlement under this standard of review below and find that it meets the requirements for adoption by the Commission under the law.

5. Analysis of the Proposed Settlement

5.1. The Proposed Settlement Is Reasonable In Light of the Record

The Proposed Settlement is reasonable in light of the record as it reasonably responds to the issues framed by this rulemaking, the scoping memo, and to concerns expressed by stakeholders prior to the initiation of settlement discussions.

The record includes, but is not limited to, the following: materials associated with public workshops (written comments, presentations, and other documents) led by Commission Staff addressing Rule 21 in April and August 2011; the September 2011 rulemaking and comments filed in response to the rulemaking; and the March 16, 2012 Proposed Settlement and comments filed in response to the Proposed Settlement.

On July 26, 2012, the ALJ issued a ruling incorporating the materials related to the April and August 2011 workshops into the record of this proceeding.[50] During these workshops, participants identified problems with the

---

[50] *Administrative Law Judge's Ruling Incorporating Materials Related to the April and August 2011 Workshops Into the Record,* filed July 26, 2012 in R.11-09-011. *See* materials for Rule 21 Working Group Workshop, April 29, 2011, and other workshop dates attached

Footnote continued on next page

presently effective Rule 21, including: (1) the failure to address engineering standards under which higher levels of distributed generation penetration might be interconnected, (2) the absence of a queue management system or study parameters for exporting generating facilities, (3) the lack of transparent study time frames beyond Initial Review, (4) the tariff's silence on a pathway to Resource Adequacy value for distribution-level interconnected systems,[51] (5) the lack of cost allocation methodology among interconnection applicants on the same line section, and (6) the absence of standardized form interconnection agreements for exporting generating facilities.[52] After taking into consideration the discussions at the workshops, the Commission issued this rulemaking in September and, subsequently, a scoping memo that identified a number of these same concerns raised at the workshops.[53]

---

to July 26, 2012 ruling and posted on the Commission's website at http://www.cpuc.ca.gov/PUC/energy/Procurement/LTPP/rule21.htm. SCE's *Case Study: Exporting Generators Under Rule 21* discusses the high volume of transmission-dependent interconnection applications received by SCE for which Rule 21 offers no study methodology; PG&E's *Case Study: Accommodating High Volumes of NEM Interconnections* discusses reaching and exceeding the 15% penetration threshold. Workshop comments were received from PG&E, SCE, a developer of mid-size solar generating facilities, the U.S. Department of the Navy, the Interstate Renewable Energy Council, and the Clean Coalition.

[51] For additional information on Resource Adequacy, refer to Pub. Util. Code § 380 (setting policy framework for utility resource adequacy requirements). Ongoing implementation of the Resource Adequacy program occurs within R.11-10-023.

[52] Commission Staff's Rule 21 Working Group Workshop Agenda at 3 (August 19, 2011).

[53] R.11-09-011 at 5-7; *see also Scoping Memo and Ruling of Assigned Commissioner at* 3-4, filed June 20, 2012 in R.11-09-011.

The rulemaking and the scoping memo confirm that this proceeding seeks to "define the appropriate interconnection study process for all types of generation resources seeking interconnection to the distribution system."[54] Participants in the workshops similarly identified this lack of definition of study processes as a flaw in the presently effective Rule 21.[55] The Proposed Settlement addresses this issue by designating all interconnection requests to one of two major study tracks. The first study track is referred to as Fast Track.[56] Fast Track is intended to be a screen-based, streamlined review process for which net energy metering, non-export, and exporting facilities (with nameplate capacity of up to 3 MW in SCE's and PG&E's service territories and up to 1.5 MW in SDG&E's service territory) are eligible. The second major evaluation track is referred to as Detailed Study. Detailed Study sets out three different study processes for any generating facility that requires additional evaluation beyond the Fast Track screens.[57] Provision of a spectrum of interconnection processes ranging from expedited to detailed, and driven by the technical characteristics of the generating facility and the point of interconnection, reasonably responds to the Commission's goal of establishing appropriate evaluation processes for all types of generation resources seeking interconnection to the utilities' distribution

---

[54] R.11-09-011 at 6.

[55] Commission Staff's Rule 21 Working Group Workshop Agenda at 3 (August 19, 2011).

[56] Attachment A, Motion at Proposed Settlement at Attachment A-1 Revised Rule 21, Section F.2.

[57] Attachment A, Motion at Proposed Settlement at Attachment A-1 Revised Rule 21 at Section F.3. The three types of detailed study are Independent Study Process, Distribution Group Study Process, and Transmission Cluster Study Process.

systems. In this respect, the Proposed Settlement is reasonable in light of the record.

The rulemaking and the scoping memo also confirm that this proceeding seeks to "create distribution-level interconnection procedures for storage technologies." The Proposed Settlement addresses this issue by introducing in the Revised Rule 21 the term "storage" to the definition of Generating Facility.[58] The inclusion of this term means that storage systems are eligible for and treated under the same evaluation processes as a generating facility. In this respect, the Proposed Settlement is further reasonable in light of the record.

In addition, the rulemaking and the scoping memo confirm that this proceeding seeks to "evaluate and determine appropriate processes for establishing distribution-level interconnection queues (serial or cluster)."[59] Participants in the workshops identified this concern as the absence of a queue management system for exporting generating facilities.[60] The presently effective Rule 21 establishes a first-come, first-served approach to interconnection processing but does not explain how to implement this approach for exporting generating facilities that require detailed study and may or may not be electrically interdependent with each other, and/or the transmission system.

---

[58] Attachment A, Motion at Proposed Settlement at Attachment A-1 Revised Rule 21 at Section C ("Generating Facility: All Generators, electrical wires, equipment, and other facilities, excluding Interconnection Facilities, owned or provided by Producer for the purpose of producing electric power, *including storage.*") (Emphasis added.)

[59] R.11-09-011 at 5; *see also* June 20, 2012 *Assigned Commissioner's Scoping Memo and Ruling* at 3.

[60] Commission Staff's Rule 21 Working Group Workshop Agenda at 3 (August 19, 2011).

The Revised Rule 21 remedies these flaws through the introduction of several steps. First, the Revised Rule 21 establishes a first-ever public queue for non-net energy metering applicants, and sets out rules under which all non-net energy metering applicants may obtain a queue position.[61] An applicant's queue position relative to those further ahead in the queue determines the timing of interconnection studies and the applicant's share of triggered upgrades. Second, the Revised Rule 21 retains a serial approach for two major evaluation tracks: Fast Track[62] and the Independent Study Process.[63] Third, the Revised Rule 21 identifies two tracks for which a cluster or group study approach is more appropriate because of electrical interdependencies: the Distribution Group Study Process and the Transmission Cluster Study Process. By setting out such extensive procedural reform, the Proposed Settlement is reasonable in light of the record.

The Proposed Settlement also responds to the presently effective Rule 21's silence on a pathway to Resource Adequacy, a deficiency identified in the rulemaking and by workshop participants. As stated in the Revised Rule 21, applicants in Fast Track, the Distribution Group Study Process, and the Independent Study Process are assumed to have selected energy-only

---

[61] Attachment A, Motion at Proposed Settlement at Attachment A-1 Revised Rule 21, Section E.5.

[62] Attachment A, Motion at Proposed Settlement at Attachment A-1 Revised Rule 21, Section F.2.

[63] Attachment A, Motion at Proposed Settlement at Attachment A-1 Revised Rule 21, Section F.3.d.

deliverability status.[64] The Revised Rule 21 further states that nothing bars a resource from applying for full capacity deliverability status pursuant to the applicable federal wholesale tariff.[65] In this respect, the Proposed Settlement responds to an identified deficiency regarding Resource Adequacy status within the presently effective Rule 21 and, as such, is reasonable in light of the record.

Finally, the Proposed Settlement addresses the presently effective Rule 21's limitation of aggregate generating capacity on a line section to 15% of that line section's peak load, a provision also identified in the record as a potential flaw.[66] The Revised Rule 21 retains the 15% of peak load screen, and, in the event that an interconnection applicant fails that screen, permits further evaluation of aggregate generating capacity on the line section against 100% of minimum load on the line section.[67] In establishing this second screen in Supplemental Review, which permits higher penetration levels of distributed generation without significantly increasing the time or expense of the interconnection process, the Proposed Settlement responds to identified concerns and, as such, is reasonable in light of the record.

The Proposed Settlement also supports the broader goals of the Commission regarding transparency, predictability, and timeliness of the

---

[64] Attachment A Motion at Proposed Settlement Agreement, Appendix A-1, Revised Rule 21, Section E.2.b.iii.

[65] Attachment A, Motion at Proposed Settlement Agreement, Appendix A-1, Revised Rule 21, Section E.2.b.iii.

[66] R.11-09-011 at 6; Commission Staff's Rule 21 Working Group Workshop Agenda at 3 (August 19, 2011).

[67] Attachment A, Motion at Proposed Settlement Agreement, Attachment A-1, Revised Rule 21, Section G.1.m (15% of peak load), G.2.a (100% of minimum load).

interconnection process by recommending, among other things, a Fast Track process for smaller generating facilities, clarifying the eligibility of storage facilities for interconnection under Rule 21, and establishing means to make public the generator's queue positions. For all the reasons above, the Commission finds that the Proposed Settlement is reasonable in light of the record.

5.2. The Proposed Settlement is Consistent With Law

The Proposed Settlement is consistent with the law as it furthers statutory mandates associated with various distributed generation programs, as well as the Commission's goals, as set forth in prior decisions, of improved timeliness and predictability within interconnection protocols.

5.2.1. Addressing Interconnection Under the Net Energy Metering Program is Consistent With Law

The Proposed Settlement is consistent with the existing law as it specifically includes an interconnection process consistent with the mandate for the net energy metering program set forth in Pub. Util. Code § 2827.

Section 2827 states that net energy metering facilities must be interconnected within thirty business days of the utility receiving a complete application. The Revised Rule 21 incorporates this time line into the interconnection process for the first time. The Revised Rule 21 also notifies interconnection applicants with non-inverter-based generators and/or non-certified equipment that engineering review of their facility's impact on the distribution system may require more than thirty days, and on that basis, recommends submission of the application six months in advance of planned commercial operation. This provision of the Revised Rule 21 is consistent with § 2827 as this code section requires the utility to notify both the customer and the

Commission of the reason for the utility's inability to process the customer-generator's application within the statutory time period and the anticipated completion date.

The Proposed Settlement is also consistent with certain cost exemption provisions of § 2827[68] because the Revised Rule 21 exempts net energy metering customer-generators from application fees and the cost of any distribution system modifications and interconnection facilities required for the interconnection of their generating facility.[69]

Accordingly, the Proposed Settlement is consistent with the law because it provides a predictable and timely process for achieving interconnection for the net energy metering program under § 2827.

5.2.2. Addressing Interconnection Under the Renewable Feed-In Tariff Program is Consistent With Law

The Proposed Settlement is consistent with existing the law on interconnection and distributed generation as it advances the mandates set forth in Pub. Util. Code § 399.20, the code section which sets out the Renewable Feed-In Tariff Program for distributed generation up to 3 MW.[70]

---

[68] Pub. Util. Code § 2827 (g); *see also* D.02-03-057, *Decision Interpreting Public Utilities Code Section 2827*, (implementing cost exemptions for net energy metering customer-generators to comply with Assembly Bill X1 29 Stats. 2001, ch. 8, April 11, 2001).

[69] Motion at Proposed Settlement at Attachment A-1 Revised Rule 21 at Section E.4.

[70] The Commission's rules applicable to the § 399.20 program are set forth most recently in D.12-05-035, *Decision Revising Feed-In Tariff Program, Implementing Amendments to Public Utilities Code Section 399.20 Enacted by Senate Bill 380, Senate Bill 32 and Senate Bill 2 1X.*

Section 399.20(e) requires expedited interconnection for certain renewable facilities up to 3 MW. The Revised Rule 21 presents a process to achieve expedited interconnection. Specifically, an exporting generating facility in the service territories of SCE and PG&E with a nameplate capacity of up to 3 MW may apply for Fast Track evaluation.[71] In the case of SDG&E, exporting facilities with a nameplate capacity of up to 1.5 MW may apply for Fast Track evaluation.[72] Accordingly, the Revised Rule 21 is consistent with the expedited interconnection requirement in § 399.20.

Section 399.20(i) also requires that the physical generating capacity of the electric generating facility count toward the utility's Resource Adequacy requirement for purposes of the Commission's Resource Adequacy program.[73] The Revised Rule 21 is consistent with this code section because it provides that an interconnection applicant under Rule 21 is not prohibited from pursuing a

---

[71] Attachment A, Motion at Proposed Settlement at Attachment A-1 Revised Rule 21 at Section E.2.b.i.

[72] Attachment A, Motion at Proposed Settlement at Attachment A-1 Revised Rule 21 at Section E.2.b.i. (The size limits reflect the range of voltages that exist within each utility's distribution system as presently configured: 3.0 MW on a 12 kilovolt (kV), 16 kV, or 33 kV interconnection for SCE; 3.0 MW on a 12 kV or higher interconnection for PG&E; and 1.5 MW on a 12 kV interconnection for SDG&E).

[73] Pub. Util. Code § 399.20(i). In D.12-05-035, *Decision Revising Feed-In Tariff Program,* was interpreted this code section not as a condition precedent to participating in the feed-in tariff but rather as a choice. A generator may choose whether to pursue a deliverability assessment pursuant to the terms of the federal interconnection tariff and, where fully deliverable, is eligible for a higher time-of-delivery factor pricing mechanism. *See* D.12-05-035 at 56. Separately, ongoing implementation of the Resource Adequacy program occurs within R.11-10-023.

deliverability assessment required for Resource Adequacy value pursuant to the utility's federal wholesale tariff.[74]

For these reasons, the Proposed Settlement is consistent with the law addressing the expedited interconnection and Resource Adequacy under § 399.20.

5.2.3. Addressing Interconnection Under the Efficient Combined Heat and Power Feed-In Tariff Program is Consistent With Law

The Proposed Settlement is also consistent with the law set forth in Pub. Util. Code §§ 2840-2845,[75] the code sections that address the feed-in tariff for Efficient CHP facilities.[76] Section 2840.6(c) expresses the state's intent to support Efficient CHP systems.[77] The Proposed Settlement does this by offering a more transparent and predictable means of achieving interconnection.

---

[74] Attachment A, Motion at Proposed Settlement at Attachment A-1 Revised Rule 21, Section E.2.b.iii. After the filing of the Proposed Settlement, the CAISO Board of Governors approved the implementation of the Distributed Generation Deliverability Initiative. (May 16, 2012 CAISO Board of Governors Meeting and Agenda.) Pending approved by FERC, this initiative will offer an additional pathway to Full Capacity Deliverability Status to distributed generation resources.

[75] Pub. Util. Code § 2840.2(a)(1). A facility eligible for the CHP Feed-in Tariff is "interconnected to, and operates in parallel with, the electric transmission and distribution grid."

[76] Pub. Util, Code § 2840.6(a)-(b). CHP is described in the statute as advancing the efficiency of the state's use of natural gas by capturing unused waste heat, helping to offset the growing crisis in electricity supply and transmission congestion in the state, and reducing wasteful consumption of energy through improved utilization of waste heat whenever it is cost effective, technologically feasible, and environmentally beneficial.

[77] Pub. Util. Code § 2840.6(c) provides: "It is the intent of the Legislature to support and facilitate both customer-and utility-owned combines heat and power systems."

As discussed above regarding § 399.20, exporting CHP generating facilities up to identified size limits in each utility's service territory are eligible for Fast Track evaluation under the Revised Rule 21.[78] Fast Track provides for an efficient evaluation process, during which the utility will be able to identify any technical issues presented by the generating facility and allow the applicant and utility to take appropriate steps to ensure safe and reliable parallel operation. Alternatively, exporting CHP facilities may move toward interconnection through any of the more in-depth evaluation processes set out as Detailed Study. As such, the Revised Rule 21 is consistent with § 2840.6 by supporting CHP systems through efficient interconnection.

Similar to the § 399.20 Renewable Feed-In Tariff Program requirements, § 2841 requires that the physical generating capacity of CHP systems count toward the Resource Adequacy requirements of utilities and other load-serving entities.[79] The Revised Rule 21 furthers this statutory mandate by providing that an interconnection applicant under Rule 21 is not prohibited from pursuing the deliverability assessment required for Resource Adequacy value.[80]

On the basis of the above, the Proposed Settlement is consistent with §§ 2840-2845, the law addressing interconnection and Resource Adequacy requirements of the Efficient CHP Feed-In Tariff Program.

---

[78] Attachment A, Motion at Proposed Settlement at Attachment A-1 Revised Rule 21, Section E.2.b.i; *see also* Motion at 2.

[79] Pub. Util. Code § 2841(f).

[80] Attachment A, Motion at Proposed Settlement at Attachment A-1 Revised Rule 21, Section E.2.b.iii.

5.2.4. Addressing Interconnection by Qualifying Facilities of 20 MW or Less is Consistent With Law

The Proposed Settlement is consistent with federal and state law regarding QFs because Revised Rule 21 presents reasonable interconnection standards for QFs.[81]

As a general matter, PURPA authorizes state public utility commissions to set technical operating standards for interconnected QFs.[82] QF interconnection standards have been set out in Rule 21 since the tariff's first iteration in the early 1980s.[83] The Revised Rule 21 continues to provide the interconnection standards for QFs of 20 MW or less and selling their power to the host utility at an avoided cost rate set by the state.[84] QFs of this size and these commercial arrangements are addressed because the settlement approved by the Commission in D.10-12-035 limits certain must-take obligations under PURPA.[85]

Accordingly, the Proposed Settlement is consistent with the law as it continues to provide QFs with reasonable interconnection standards.

5.3. The Proposed Settlement is in the Public Interest

The Proposed Settlement is in the public interest as it supports the state and federal energy policy of promoting the interconnection of distributed

---

[81] 18 C.F.R. § 292.308; Commission Resolution E-4477 (March 8, 2012) at 5.

[82] 18 C.F.R. § 292.308.

[83] D.82-01-103, *Commission Rules Regarding Electric Utility Purchases of Electric Power from Cogeneration and Small Production Facilities;* D.83-10-093.

[84] D.10-12-035, *Decision Adopting Proposed Settlement* at 2. The Commission approved a comprehensive, multiparty settlement addressing numerous issues related to QFs in 2010 (QF Settlement).

[85] D.10-12-035, *Decision Adopting Proposed Settlement* at 23.

generation and renewable energy. The Proposed Settlement is also in the public interest by recommending additional Commission oversight of Rule 21 disputes and by suggesting the Commission move forward expeditiously on certain issues in phase 2.

5.3.1. Supporting State and Federal Energy Policy is in the Public Interest

State and federal energy policy on interconnection and distributed generation were significantly advanced in 1978 by the enactment of PURPA.[86] PURPA launched Congress' national effort to promote energy independence and efficiency. Under PURPA, certain generating facilities, specifically, QFs, receive benefits and exemptions from state and federal regulation because of identified energy efficiencies.[87] As noted above, the Commission's first iteration of Rule 21 facilitated the interconnection of QFs in California.

FERC implemented PURPA through a series of rulemakings that resulted in, among other things, the promulgation of FERC's Small Generator Interconnection Procedure (SGIP) in 2006, which was drawn, in part, from the then-existing Rule 21.[88] The SGIP contains the federal regulations for interconnection for QFs and represents FERC's effort to standardize the terms

---

[86] 16 U.S.C. § 796, § 824a-3 and §§ 2601, *et seq.*

[87] 16 U.S.C. § 824a-3(e)(1).

[88] *Standardization of Small Generator Interconnection Agreements and Procedures,* Order No. 2006, FERC Stats. & Regs. ¶ 31,180 (2005) (FERC Order No. 2006), order on reh'g Order No. 2006-A, FERC Stats. & Regs. ¶ 31,196 (2005) (FERC Order No. 2006-A), order on reh'g, Order No. 2006-B, FERC Stats. & Regs. ¶ 31,221 (2006) (FERC Order No. 2006-B). These FERC Orders are available at http://www.ferc.gov/industries/electric/indus-act/gi/small-gen.asp).

and conditions of interconnection service.[89] FERC then encouraged states to rely upon SGIP as a source of interconnection rules to further harmonize state-federal interconnection practices.[90] FERC also anticipated that the rules adopted in the SGIP would "reduce interconnection time and costs…preserve reliability, increase energy supply, lower wholesale prices for customers by increasing the number and types of new generation that will compete in the wholesale electricity market, facilitate development of non-polluting alternative energy sources, and help remedy undue discrimination."[91]

The Proposed Settlement supports federal policy goals of standardization and development of the distributed generation market by relying upon the SGIP for certain of its interconnection procedures.[92] The Proposed Settlement also supports the Commission's policy of standardizing interconnection terms and conditions at the level of the utility distribution systems.[93] Notably, standardized terms and conditions are found in all three documents that form the core of the Proposed Settlement: (1) the Revised Rule 21 (2) the Proposed Interconnection Request and (3) the Proposed Interconnection Agreement.[94] The Proposed Interconnection Request identifies substantially the same information

---

[89] FERC Order 2006 at ¶ 1.

[90] FERC Order 2006 at ¶ 4. FERC Order 2006 and SGIP apply to interconnections to facilities that are subject to a transmission provider's open access transmission tariff at the time the request is made. FERC Order 2006 at ¶ 5.

[91] FERC Order 2006 at ¶ 1.

[92] Motion at 12-13 (identifying provisions in the Revised Rule 21 based on SGIP).

[93] D.00-11-001, *Interim Decision Adopting Interconnection Standards* (setting out model tariff and ordering adoption); D.00-12-037, *Decision Adopting Interconnection Standards,* (ordering adoption of revised model tariff).

that each utility must request from an interconnection applicant. All qualified applicants for interconnection will be evaluated according to the standardized analysis tracks set out in the Revised Rule 21. The Proposed Interconnection Agreement sets out the same terms and conditions for any interconnected facility regardless of which utility executes the agreement.

Efforts to achieve increased standardization are critical to continued market development of renewable resources, especially given the number and diversity of distributed generation and storage programs enacted in California since the last revision of Rule 21 in 2000. In this manner, the Revised Rule 21 and associated forms will provide developers with advance knowledge of the technical information requested at the outset of an interconnection application, the process by which an interconnection request is evaluated, and the terms and conditions of an interconnection agreement.

The Proposed Settlement also supports the federal and state policy goals of developing distributed generation as an alternative energy supply.[95] The Revised Rule 21 furthers these goals by establishing a predictable, transparent path to interconnection for distributed generation resources and by eliminating barriers that exist due to unclear and non-standardized interconnection terms and conditions.

---

[94] Attachment A, Motion at Proposed Settlement at Attachments A-1 to A-7.

[95] *See, e.g.,* D.00-12-037, *Decision Adopting Interconnection Standards (*redesigned Rule 21 to fulfill the intent of Assembly Bill 970 to relieve California electricity supply constraints through distributed energy resources); § 2840.6(a) (expressing legislative intent that efficient CHP offset "growing crisis in electricity supply"); § 399.20(a) (expressing legislative intent to encourage electrical generation from renewable feed-in tariff participants); D.10-12-035, *Decision Adopting Proposed Settlement* (identifying "resource diversity" as a major goal of the QF Settlement).

Lastly, the Proposed Settlement supports the federal and state policy goals of operating a safe and reliable electric grid.[96] Safe and reliable operation of the electric grid has always been a central purpose of Rule 21.[97] Even as the Commission moved to a more-efficient screen-based review of interconnection applicants in 2000, safety and reliability remained the core purpose of Rule 21.[98] The Revised Rule 21 continues to support the safety and reliability of the electric grid by, for example, retaining eight of the screens included as part of the presently effectively Rule 21 Initial Review process under the Revised Rule 21. These screens pose key technical questions that relate to system safety and reliability, such as starting voltage drop, short circuit current contribution and short circuit interrupting capability, and line configuration.[99] In addition, Section H (Generating Facility Design and Operating Requirements) of the presently effective Rule 21 is unmodified and continues to refer to accepted national and international standards for operation of an electric grid.[100]

On the basis of the above, the Proposed Settlement serves the public interest by supporting federal and state energy policy goals related to distributed generation, including increased standardization of interconnection terms and

---

[96] *See* Pub. Util. Code § 701.1(a); 16 U.S.C. § 824(j)(6).

[97] D.82-10-103, 18 C.F.R. § 292.308 (granting state utility commissions authority to set reasonable operating standards for QFs to ensure system reliability and safety).

[98] D.00-12-037, *Decision Adopting Interconnection Standards* at Attachment A.

[99] Attachment A, Motion at 11.

[100] Attachment A, Motion at 11-12; Motion at Proposed Settlement at Attachment A-1 Revised Rule 21, Section H, referencing consistency with and enumerating exceptions to standards set by American National Standards Institute and Institute of Electronic and Engineers.

conditions, the development of the distributed generation market as an alternative energy supply, and the operation of a safe and reliable electric grid.

5.3.2. Seeking FERC Approval for Conforming Changes to Federal Wholesale Tariffs is in the Public Interest

In the Proposed Settlement, the utilities agree to seek FERC approval of certain needed changes to their respective federal wholesale tariffs.[101] In addition, the remaining Joint Settlement Parties agree to support or not oppose any such filings.[102] We find that the inclusion of this provision in the Settlement Agreement is in the public interest because the proposed FERC filings will close certain gaps between state and federal interconnection regulations and, thereby, further the standardization goals discussed above. Conforming interconnection standards will also serve the public interest by limiting opportunities for forum shopping between state and federal interconnection tariffs.

5.3.3. The Recommendation for Commission Staff Oversight of Utility Compliance with the Revised Rule 21 is in the Public Interest

The Proposed Settlement recommends additional oversight of the utilities' implementation of the Revised Rule 21 by Commission Staff. We find these recommendations have merit and will seek to implement them to the extent possible. We clarify, however, that we interpret these provisions of the Proposed Settlement as a request by the Joint Settlement Parties that the Commission make its best efforts, as it deems appropriate, to implement the recommendations and

---

[101] Attachment A, Motion at Proposed Settlement, Section II.F.

[102] Attachment A, Motion at Proposed Settlement, Section II.F.

in no manner do these provisions bind the Commission in either making such efforts or as to the final outcome of such efforts.

With that important clarification, the Proposed Settlement identifies a set of engineering analysis results in the Revised Rule 21 and proposes that, as a minimum, Commission Energy Division Staff monitor those results.[103] The data requested for monitoring focuses on utility compliance with the timelines for the completion of evaluation processes and interconnection studies.[104] We find the inclusion of this recommendation in the Proposed Settlement to be in the public interest. As noted above, a major contributing factor to the need for Rule 21 reform is the absence of specific timelines beyond Initial Review. The Proposed Settlement takes a major step forward in this regard by setting out timelines for completing an interconnection request and obtaining queue position, Fast Track (including both Initial Review and Supplemental Review), and the Independent Study Process. Importantly, timelines are also established for developers of distributed generation, in terms of responding to utility requests for information, meeting to discuss study results, and posting financial security to move ahead in the process.

The Proposed Settlement also proposes that the Commission train its Consumer Affairs Branch on matters specifically related to Rule 21.[105] We find this proposal has merit. The Commission's Energy Division Staff will take the

---

[103] Attachment A, Motion at Proposed Settlement, Section G; Attachment C. *Minimum Engineering Review Data to be Included in the Reporting Proposal.*

[104] Attachment A, Motion at Proposed Settlement, Section G; Attachment C, *Minimum Engineering Review Data to be Included in the Reporting Proposal.*

[105] Attachment A, Motion at Proposed Settlement, Section G.

initiative on this training. Again, however, we clarify that we interpret these provisions of the Proposed Settlement as a request by the Joint Settlement Parties that the Commission make its best efforts, as it deems appropriate, to implement this proposal, and that in no manner does the proposal bind the Commission in either making such efforts or as to the final outcome of such efforts.

The Proposed Settlement also proposes that the Commission make the ALJ Division's Alternative Dispute Resolution resources available to parties in a dispute regarding Rule 21 and more specifically, within ten business days of a request for such resources to address a timeline-related dispute.[106] No additional training is proposed. We find merit in the proposal. Again, however, we clarify that we interpret these provisions of the Proposed Settlement as a request by the Joint Settlement Parties that the Commission make its best efforts, as it deems appropriate, to implement this proposal, and that in no manner does the proposal bind the Commission in either making such efforts or as to the final outcome of such efforts.

5.3.4. The Recommendation to Include Certain Issues in Phase 2 is in the Public Interest

The Proposed Settlement recommends certain issues to be addressed by the Commission in phase 2 of this proceeding.[107] As stated above in our discussion regarding the Proposed Settlement's recommendations regarding certain Commission actions, we again clarify that we interpret the recommendation regarding phase 2 in the Proposed Settlement as a request by the Joint Settlement Parties that the Commission make its best efforts, as it deems

---

[106] Attachment A, Motion at Proposed Settlement, Section G.

[107] Attachment A, Motion at Attachment B, *Recommended Scope of Phase 2 Issues.*

appropriate, to address the identified issues, and that in no manner does this recommendation bind the Commission in either making such efforts or as to the final outcome of such efforts. With that stated, it is reasonable to find that the public interest will be served by taking into consideration the Joint Settlement Parties' recommendations when the assigned Commissioner and ALJ define the issues to be addressed in phase 2.

6. Opposition by DRA

The Proposed Settlement was opposed by one party, DRA. DRA's opposition focuses on Article 5 of the Proposed Interconnection Agreement.[108] Article 5 sets out provisions to govern cost responsibility for transmission system upgrades if such upgrades are triggered by an applicant under Rule 21. The specific provision of Article 5 in dispute mirrors the same provision in the three utilities' Small Generator Interconnection Agreement (SGIA) attached to their federal wholesale tariffs.[109] Article 5 references the CAISO Tariff provisions identifying a generating resource's eligibility for ratepayer reimbursement for transmission network upgrades.[110]

DRA contends that this provision shifts transmission upgrade costs to ratepayers.[111] DRA also contends that no need exists for the inclusion of this provision because "under jurisdictional requirements of network costs, at this

---

[108] Attachment A, Motion at Proposed Settlement at Attachments A-2, A-4 and A-6.

[109] Motion at Appendix A, page B-1.

[110] Attachment A, Motion at Proposed Settlement at Attachments A-2, A-4, A-6 at Article 5 (referencing CAISO Tariff Appendix Y, Section 12.3.2).

[111] DRA, *Comments In Opposition to the Motion of the Settling Parties for Approval of Settlement Agreement* at 2-3 (April 13, 2012).

stage, such generators would not be able to use the proposed interconnection agreement."[112]

A response to DRA's opposition was filed jointly by eleven of the Joint Settlement Parties.[113] The joint reply explains that the ratepayer reimbursement provision included at Article 5 of the Proposed Interconnection Agreement was designed to create a level playing field between the applicants seeking interconnection under the Revised Rule 21 and those seeking interconnection under the CAISO FERC-jurisdictional tariffs.[114] These parties explain that, only by allowing Rule 21 applicants to participate in the same ratepayer reimbursement scheme available to applicants under the federal tariffs, can the Commission further its goal in R.11-09-011 of ensuring that interconnection under Rule 21 "is timely, non-discriminatory, cost-effective, and transparent."[115] These parties further note that approval of Article 5 does not prevent full consideration of cost allocation issues at a later date in this rulemaking, as the Joint Settlement Parties recommend.[116]

---

[112] DRA, *Comments in Opposition to the Motion of the Settling Parties for Approval Settlement Agreement* at 2-3 (April 13, 2012).

[113] *Joint Reply Comments on the Motion for Approval of Settlement Agreement Revising Distribution Level Interconnection Rules and Regulations (Rule 21)* (May 1, 2012) (Joint Reply Comments). The Joint Reply Comments were filed by SCE on behalf of itself and PG&E, SDG&E, Aloha Systems, Clean Coalition, Interstate Renewable Energy Council, Sierra Club; Solar Energy Industries Association, Sun Edison Sustainable Conservation, and The Vote Solar Initiative.

[114] Joint Reply Comments at 2 (*citing to* CAISO Tariff and analogous provisions in the interconnection agreements associated with the wholesale tariffs of each utility).

[115] Joint Reply Comments at 3.

[116] Joint Reply Comments at 3.

We have considered the arguments set forth in DRA's opposition and decline to modify the Proposed Settlement. First, and most importantly, we clarify that no developer of an exporting generating facility, to the best of our knowledge, has reached the point in the Rule 21 interconnection process of triggering transmission network upgrades, and thereby invoking the cost allocation principles set out in the CAISO Tariff. Furthermore, the presently effective Rule 21 is completely silent on this potential situation. We find it probable that, in such a situation, the generator would be presented with the option of whether to continue the interconnection process under Rule 21 (which has no procedure/cost allocation principles in place for transmission network upgrades) or, instead, continue the interconnection process under the utility's federal wholesale tariff with clear reference to the CAISO Tariff (which contains an established process/cost allocation principles when transmission network upgrades are triggered), and that the generator would opt to proceed under the federal wholesale tariff, because the latter process is more clearly defined.

With this additional background in mind, we find that DRA's presentation of Article 5 as resulting in cost-shifting is not entirely accurate. Viewing the issue in a more complete manner, we find that Article 5 does not result in cost-shifting, but instead represents an effort to add clarity to the situation which exists today. No defined process exists for Rule 21 applicants that trigger transmission network upgrades and, as a result, such applicants would probably rely on the utilities' federal wholesale tariffs and the CAISO Tariff, which imposes certain costs on ratepayers. In this regard, the new provision does not represent a change, as DRA contends.

Second, we disagree with DRA that this provision is not needed at this time. The Revised Rule 21 clearly contemplates interconnection of generating

facilities that may, because of their point of interconnection, trigger transmission network upgrades.[117] Where such upgrades are triggered, the interconnection agreement should explicitly state the terms of financial responsibility for such upgrades to further the goals of this proceeding, namely, advancing transparency and predictability in the interconnection process. Article 5 of the Proposed Interconnection Agreement accomplishes this purpose.

For these reasons, we decline to modify the Proposed Settlement in response to DRA's opposition.

7. Comments by Parties

CAISO and the City and County of San Francisco (CCSF) separately filed comments on the Proposed Settlement. CAISO supports the Proposed Settlement and identifies the areas of coordination between CAISO and utility engineers during the interconnection process.[118] CCSF also supports the Proposed Settlement and proposes additional subjects for the scope of phase 2 of this proceeding, including a "resource planning and procurement study process," and a "cluster study methodology similar to that employed by the CAISO."[119]

In reply comments, the Joint Settlement Parties generally agree with CAISO and CCSF. They support all coordination efforts and clarify that the

---

[117] Attachment A, Motion at Proposed Settlement at Attachment A-1 Revised Rule 21, Section G.1.1 (querying for electrical interdependence with the transmission system, and identifying evaluation in the event of such interdependence).

[118] Comments of the CAISO (April 16, 2012) at 3.

[119] Comments of the City and County of San Francisco (April 16, 2012) at 2.

issues presented in the Proposed Settlement for phase 2 are "non-exclusive" and, as a result, they do not oppose CCSF's additional proposed topics.[120]

We support the points raised by CAISO and CCSF. Coordination between CAISO and this Commission is critical. In terms of the scope of phase 2, we appreciate CCSF's suggestions and a final determination on the scope of phase 2 will be made when a phase 2 scoping memo is issued by the assigned Commissioner.

8. Motions to Adopt Utilities' Rule 21 Transition Plans - Granted

This decision grants the motions filed on April 23, 2012 by PG&E, SCE and SDG&E.[121] These three motions request the Commission to adopt transition plans for each utility for the purpose of establishing how pending interconnection requests under the presently effective Rule 21 will be transitioned to the Revised Rule 21 following the effective date of the utilities' Revised Rule 21.

PG&E, SCE and SDG&E filed these Motions after Vote Solar Initiative filed a motion requesting, among other things, a ruling directing the three utilities to each file a transition plan for moving queued interconnection applicants from the presently effective Rule 21 to the revised Rule 21.[122] On April 20, 2012, the assigned ALJ issued a ruling directing the utilities to file these transition plans by

---

[120] Joint Reply Comments at 3.

[121] On April 23, 2012 the following motions were filed: PG&E's *Motion to Adopt a Rule 21 Transition Plan,* SCE's *Motion to Adopt Transition Plan,* and SDG&E *Motion Concerning Transition Plan.*

[122] Vote Solar Initiative's *Motion of the Vote Solar Initiative to Adopt an Interim Procedure* at 2-3 (March 2, 2012)

April 23, 2012 and permitting parties the opportunity to file comments.[123] Comments were received from Silverado Power, LLC.[124] As discussed in more detail below, the proposed transition plans are reasonable and are adopted.

8.1. PG&E's Transition Plan

In its proposed transition plan, PG&E separately treats two groups of interconnection applicants: (1) net energy metering or non-export generators and (2) certain defined "wholesale generators."[125] Notably, at present, PG&E has no pending queued backlog of exporting generating facilities.

Regarding net energy metering and non-exporting generators, PG&E notes that the presently effective Rule 21 Tariff functions well and no need exists to modify the interconnection process for this group. This approach is reasonable as it is consistent with Commission's statements in this rulemaking that the presently effective Rule 21 is sufficient for generators primarily serving on-site load.[126] On that basis, PG&E is directed to continue using the presently effective Rule 21 for these types of interconnection customers until the effective date of the Revised Rule 21, at which point the terms of the Revised Rule 21 will immediately apply to any pending net energy metering and non-exporting interconnection requests. Given the high degree of continuity for net energy metering and non-exporting generating facilities between the presently effective

---

[123] *Administrative Law Judge's Ruling Granting the Motion of Vote Solar* at 5-6 (April 20, 2012).

[124] *Comments of Silverado Power LLC on the Rule 21 Transition Plans of SCE, SDG&E, and PG&E* (May 7, 2012).

[125] Attachment B, PG&E *Motion to Adopt a Rule 21 Transition Plan* at 1,3.

[126] R.11-09-011 at 4.

Rule 21 and the Revised Rule 21, we anticipate that this transition will occur without disruption to the interconnection process for those requests.

Regarding exporting generators, PG&E notes that, as of April 23, 2012, the date it filed its transition plan, it had no interconnection applicants of this type under Rule 21.[127] Taking into consideration the current absence of any pending exporting generation interconnection requests, PG&E proposes that any such generator requesting interconnection prior to the effective date of the Revised Rule 21 use the proposed interconnection request form and the interim agreement that PG&E attaches to its transition plan.[128] The interim agreement provides notice to the applicant that revisions to Rule 21 are currently under consideration by the Commission and also sets forth the terms under which the parties will proceed, which include all the revisions now under consideration by the Commission with the exception of provisions pertaining to Confidentiality (Section D.7), Pre-Application Report (Section E.1), Publication of the Interconnection Queue (Section E.5.d), and Compliance with Timelines (Section F.1.d).[129] PG&E notes that these excluded terms are not needed to initially process the interconnection request of an exporting generating facility and, therefore, are omitted.

---

[127] Attachment B, PG&E *Motion to Adopt a Rule 21 Transition Plan* at 1, 3. This is in part due to the fact that PG&E elected to use the federal wholesale tariff for its Renewable Feed-in Tariff, as the Commissioned permitted in D.07-07-027.

[128] Attachment B, *PG&E Motion to Adopt a Rule 21 Transition Plan* at Attachment A (Exporting Generator Interconnection Request) and Attachment B (PG&E Revised Rule 21 Transition Plan Interim Letter Agreement). The Exporting Generator Interconnection Request is the same as the form proposed within the larger settlement.

[129] Attachment B, PG&E *Motion to Adopt a Rule 21 Transition Plan at* Attachment B.

For the reasons set forth above, PG&E's transition plan, including the attached proposed interconnection request form and interim agreement for any eligible exporting generators, presents a reasonable means of addressing all applicants that seek interconnection before the effective date of any Commission-approved revisions to Rule 21. On that basis, upon the effective date of the Revised Rule 21, PG&E shall implement its proposed transition plan with respect to all pending applicants under Rule 21.

8.2. SCE's Transition Plan

SCE has a significant backlog of Rule 21 interconnection requests in its queue. Most of these pending requests are by exporting generating facilities seeking to participate in the Renewable Feed-In Tariff Program. SCE explains that this backlog exists because it has determined that many applicants (approximately 400 as of the date of its transition plan) are electrically interdependent with the transmission system.[130] As a result, such applicants may require a more detailed and lengthier evaluation process. SCE further explains that a transition plan is important because these pending transmission-interdependent applications are in various stages of the interconnection process.[131] Similar to PG&E, SCE's transition plan separately treats two groups of interconnection applicants: (1) net energy metering or non-export generators and (2) exporting generators.

Regarding net-energy metering or non-exporting generators, SCE proposes to make the Revised Rule 21 applicable to any new requests after the

---

[130] Attachment C, SCE's *Motion to Adopt Transition Plan* at 4.

[131] Attachment C, SCE's *Motion to Adopt Transition Plan* at 4.

effective date of the Commission-approved revisions.[132] As an additional consideration, however, and in an effort to further expedite requests, SCE notes that consistent with the Revised Rule 21, a net energy metering or non-export generator that is not inverter-based or using non-certified equipment should now submit their interconnection request at least 6 months in advance of their planned commercial operation date.[133] Even though this 6-month provision is not yet effective, we find it reasonable for SCE to apply it during this transition in an effort to expedite all future requests. We find this approach reasonable with respect to these types of interconnection applicants and anticipate that this transition will cause no disruption to the interconnection process for such applicants.

Regarding exporting generators, SCE's proposed transition plan is reasonable as it offers certainty regarding a generator's queue position, seeks efficiencies where possible, provides certain benefits to exporting generators set forth in the Revised Rule 21, and refrains from incorporating unfamiliar elements. The transition plan is discussed in more detail below.

Queued Applicants Maintain Queue Positions: SCE's proposed transition plan is reasonable as it maintains queue position for all applicants in the Rule 21 interconnection queue with exporting generating facilities, including positions vis-a-vis (applicants queued under SCE's federal wholesale tariff.)[134] In many cases, queue position is a key determinant of ultimate system impact and costs. This is because applicants under both Rule 21 and the federal wholesale tariffs

---

[132] Attachment C, SCE's *Motion to Adopt Transition Plan* at 3.

[133] Attachment C, SCE's *Motion to Adopt Transition Plan* at 3.

have points of interconnection on the distribution system (and thus may be queued next to each other), and/or are electrically interdependent with earlier-queued transmission-level interconnection requests. In this respect, SCE's proposal is responsive to the concerns raised by Silverado Power's comments. In Silverado Power's comments, preserving queue position was a central theme.[135]

Exporting Generators Benefit From Advances In the Revised Rule 21: SCE's proposal is reasonable as it allows exporting generators to benefit from certain favorable provisions in the Revised Rule 21. Specifically, as of the effective date of any Commission-approved Revised Rule 21, SCE's transition plan moves any pending applicants in SCE's presently effective Rule 21 Initial Review or Supplemental Review process to the Revised Rule 21 Fast Track evaluation process, provided that the applicant meets the eligibility criteria.[136] In this manner, an exporting generating facility is provided with the opportunity to qualify for Fast Track evaluation where under the presently effective Rule 21, that generator would most likely require a more time-consuming detailed study.

Transition Plan Seeks Efficiencies: SCE's proposal is reasonable as it seeks interconnection efficiencies where possible. First, SCE proposes operational studies to permit interconnection of generators located outside of an area with known transmission constraints but that otherwise would be required to wait for additional study until upgrades triggered by earlier-queued projects are

---

[134] Attachment C, SCE's *Motion to Adopt Transition Plan* at 4.

[135] Silverado Power *Response to Motion of the Vote Solar Initiative to Adopt an Interim Procedure* at 3, (May 7, 2012).

[136] Attachment C, SCE's *Motion to Adopt Transition Plan* at Attachment 1 at 1-2.

completed.[137] Following the operational study, qualifying generators meeting certain conditions would be eligible for interconnection.[138] Second, SCE establishes timelines for conducting serial system impact studies of the approximately 400 transmission-interdependent applicants and establishes timelines for further portions of the interconnection process for blocks of 75 applicants as they elect to continue the process.[139] This approach appropriately manages applicant expectations and SCE's interconnection department workload. Third, SCE's proposal achieves efficiencies by applying the Revised Rule 21 requirements for executing certain milestones or the withdrawal of an interconnection request.[140] SCE also applies the deadlines in the Revised Rule 21 to itself.[141] Applying these requirements is important for ensuring that only viable projects remain in the queue.

No Unexpected Changes in Interconnection Terms and Conditions: SCE's proposed transition plan is reasonable because it does not apply unexpected changes in interconnection terms and conditions. SCE identifies March 16, 2012 as the date public notice was issued of the potential modifications to Rule 21.[142]

---

[137] Attachment C, SCE's *Motion to Adopt Transition Plan* at 7.

[138] Attachment C, SCE's *Motion to Adopt Transition Plan* at 7.

[139] Attachment C, SCE's *Motion to Adopt Transition Plan,* Attachment 1 at 1-3.

[140] *See, e.g.* Attachment C, SCE's *Motion to Adopt Transition Plan,* Attachment 1 at 1-2 (requiring interconnection requests that have passed Initial or Supplemental Review to execute a Generator Interconnection Agreement according to deadlines in the Revised Rule 21).

[141] *See, e.g.,* Attachment C, SCE's *Motion to Adopt Transition Plan,* Attachment 1 at 1-4 (requiring SCE to tender a study agreement to eligible generators according to deadlines in the Revised Rule 21).

[142] Attachment C, SCE's *Motion to Adopt Transition Plan* at 4.

It is reasonable for SCE to rely on this date for purposes of establishing notice to potential interconnection applicants because the Proposed Settlement, with the proposed Revised Rule 21, became publicly available on that date.

Further, while SCE proposes a change to the Revised Rule 21 timelines by completing interconnection studies in serial fashion for generators meeting certain conditions, depending on their queue position date and the status of their interconnection study, this change represents an improvement over what would otherwise occur.[143] Under the presently effective Rule 21, these applicants would proceed without recourse to established timelines, because the existing tariff is silent on Independent Study Process procedures. Under the Revised Rule 21, these applicants would be required to enter the next applicable transmission cluster study in March 2013, a result that would be untenable and unfair. Instead, as SCE proposes, the serial studies will progress based on a set of revised timelines driven by the applicant's queue date and decisions about whether to proceed.[144]

For the reasons set forth above, SCE's transition plan present a reasonable means of addressing an applicant that seeks interconnection before the effective date of any Commission-approved revisions to Rule 21. On that basis, upon the effective date of the Revised Rule 21, SCE shall implement its proposed transition plan with respect to all pending applicants under Rule 21.

---

[143] Attachment C, SCE's *Motion to Adopt Transition Plan,* Attachment 1 at 1-3 (interconnection applicants eligible for serially conducted Independent Study Process are in transmission-interdependent areas and have a queue date on or before March 16, 2012).

[144] Attachment C, SCE's *Motion to Adopt Transition Plan* at 5.

8.3. SDG&E's Transition Plan

Similar to PG&E and SCE, in its transition plan SDG&E proposes to treat two groups of applicants separately: (1) net energy metering or non-export generators and (2) exporting generating facilities. SDG&E notes that at present, it does not have a backlog of either non-exporting or exporting generators.[145]

Regarding net energy metering and non-exporting generators, SDG&E proposes to apply the Revised Rule 21 to each net energy metering and non-export generating facility on the effective date of any Commission-approved tariffs.[146] On this effective date, SDG&E will begin processing interconnection requests from net energy metering and non-export generators under the terms of the Revised Rule 21. This proposal is reasonable. Similar to SCE, SDG&E's proposal seeks to notice net energy metering and non-export generators that are not inverter-based or not using certified equipment, as defined in the Revised Rule 21, to submit their interconnection request at least six months in advance of their planned commercial operation date.[147] We find this proposal reasonable as it serves to expedite the interconnection process. SDG&E is directed to continue using the presently effective Rule 21 for these types of interconnection customers, and, upon the effectiveness date determined by the Commission, immediately begin to apply the Revised Rule 21 to any pending net energy metering or
non-export generator interconnection requests. As discussed above with respect

---

[145] Attachment D, SDG&E's *Motion Concerning Transition Plan* at 2-3.

[146] Attachment D, SDG&E's *Motion Concerning Transition Plan,* Attachment 1 at 1-1 (April 23, 2012).

[147] Attachment D, SDG&E's *Motion Concerning Transition Plan* at 5.

to PG&E and SCE, we find this approach reasonable, and anticipate that this transition will cause no disruption to the interconnection process for such applicants.

Regarding exporting generating facilities, SDG&E reports that it has applications from eleven exporting generators at present under Rule 21.[148] Of those, SDG&E reports that two groups of projects (one consisting of six and the other of three projects) are electrically interdependent with each other and thus are most appropriately studied as two distribution-level cluster or group studies.[149] SDG&E further states that the two applicants sponsoring each of those groups of projects have agreed to the distribution cluster study process, which is an option provided for in the Revised Rule 21 at Section F.3.b.ii.[150]

SDG&E proposes to study the remaining two applicants under the timelines set out in the Independent Study Process in the Revised Rule 21.[151] Given SDG&E's small number of queued applicants and because the proposed timeline is an improvement over the presently effective Rule 21, which contains no timelines for detailed study, this approach is reasonable.

Although it does not have a backlog of requests, SDG&E identifies proposed steps with respect to any applicant that might apply prior to the effective date of a Commission-approved Revised Rule 21. In essence, SDG&E proposes to apply the Revised Rule 21 to all applicants with a queue date later than April 23, 2012 (the date SDG&E filed its proposed transition plan) and on or

---

[148] Attachment D, SDG&E's *Motion Concerning Transition Plan* at 3.

[149] Attachment D, SDG&E's *Motion Concerning Transition Plan* at 3.

[150] Attachment D, SDG&E's *Motion Concerning Transition Plan* at 3.

[151] Attachment D, SDG&E's *Motion Concerning Transition Plan* at 3.

before this effective date.[152] SDG&E's proposal mirrors SCE's with one exception. SDG&E does not propose extended timelines for projects undergoing the Independent Study Process, because such applicants in SDG&E's service territory are a fraction of those queued in SCE's service territory.[153] Given that any applicant (beyond the eleven currently queued) to SDG&E at this point in time will be submitting an interconnection request shortly before the effectiveness date of the Revised Rule 21, it is reasonable to apply the Revised Rule 21 to such requests.

For the reasons set forth above, SDG&E's transition plan presents a reasonable means of addressing an applicant that seeks interconnection before the effective date of any Commission-approved revisions to Rule 21. On that basis, upon the effective date of the Revised Rule 21, SDG&E shall implement its proposed transition plan with respect to all pending applicants under Rule 21.

8.4. Silverado Power's Comments

Silverado Power filed comments on the motions to adopt proposed transition plans which suggest that all queued generators in SCE's and SDG&E's service territories should be permitted to proceed under the presently effective Rule 21.[154] In support of its position, Silverado Power raises three arguments. First, Silverado Power expresses concern that the financial security requirement required for projects in the Independent Study Process under the Revised Rule

---

[152] Attachment D, SDG&E's *Motion Concerning Transition Plan,* Attachment 1, at 1-1 through 1-4.

[153] Attachment D, SDG&E's *Motion Concerning Transition Plan* at 3-4.

21 is higher than that in the presently effective Rule 21 and that this change constitutes an additional unanticipated requirement for applicants.[155] Second, rather than having the Commission adopt transition plans, Silverado Power requests that generators be provided the option to proceed under either the presently effective Rule 21 or the Revised Rule 21.[156] Third, Silverado Power requests that SCE and SDG&E be specifically directed by the Commission to meet timelines set out in existing Rule 21 agreements.[157] Each of these concerns is addressed below.

Financial Security Postings: Under the presently effective Rule 21, the developer of a non-net energy metering generating facility is responsible for all costs of interconnection facilities and distribution system modifications required for parallel operation.[158] This cost allocation scheme is not modified by the Revised Rule 21. The Revised Rule 21 alters only the timing of payment of costs for the modifications triggered by any generating facility. Under the Revised Rule 21, an applicant is required to post certain portions of the cost of triggered

---

[154] Comments of Silverado Power at 1-2. Silverado Power does not comment on PG&E's proposed transition plan because of the absence of queued projects in PG&E's service territory.

[155] Comments of Silverado Power at 3.

[156] Comments of Silverado Power at 3.

[157] Comments of Silverado Power at 4. Although Silverado Power does not specify, we take "existing Rule 21 agreements" to mean any executed *study* agreements between either SCE or SDG&E and an applicant.

[158] Attachment E, presently effective Rule 21 at Section E.1, E.2, E.3. Pursuant to Commission decisions, each utility has maintained substantively similar tariff language within Rule 21, including section references. On the basis, section references to the presently effective Rule 21 here to SCE's tariff but equally correspond to PG&E's or SDG&E's filed tariff unless otherwise noted.

upgrades within established deadlines.[159] An applicant's withdrawal from the interconnection process results in a refund of the portion of the posted financial security not used for costs incurred by the utility or already irrevocably committed.[160] Therefore, while the timing of the payment is modified, none of the above provisions change the basic terms of the cost of interconnection, which is that the developer is financially responsible for any triggered distribution system modifications. As a result, we find this aspect of the transition plans reasonable.

Developer Choice of Presently Effective or Revised Rule 21: Silverado Power requests that the transition plans offer generators the choice of relying on either the presently effective Rule 21 or the Revised Rule 21. In support of this request, Silverado Power notes that a number of interconnection studies are already underway, particularly in SCE's service territory. Silverado Power offers no facts addressing how the timelines for studies currently underway would be impacted by SCE's or SDG&E's transition plans. In contrast, SCE sets forth a plan with manageable, defined timelines in which to complete those studies needed for pending interconnection requests.[161]

As we noted above, some of SCE's proposed timelines are potentially longer than timelines currently set out in individual study agreements entered into under the presently effective Rule 21. However, taking into consideration

---

[159] Attachment A, Motion at Proposed Settlement at Attachment A-1 Revised Rule 21, Sections F.4.a-d.

[160] Attachment A, Motion at Proposed Settlement at Attachment A-1 Revised Rule 21, Section F.4.e.

[161] Attachment C, SCE's *Motion to Adopt Transition Plan* at 4.

SCE's current backlog of interconnection requests, it is highly unlikely that SCE will meet those timelines. We find the revised timelines reasonable as they are more realistic and transparent and, as a result, provide greater certainty. Moreover, Silverado Power's suggestion of introducing generator choice into this already complex situation would fail to advance the predictability and transparency of the interconnection process, a major goal of the Commission. As a result, we find this aspect of the transition plans reasonable and decline to modify them on the basis of Silverado Power's comments.

Timelines Established in Existing Study Agreements: As noted above, for projects queued in SCE's territory, SCE is proposing to meet the timelines set out in the Revised Rule 21 (rather than the presently effective Rule 21), and, for certain applicants, a revised timeline presented in its transition plan. We find this approach reasonable because, as discussed more fully above, it offers a solution to SCE's workload problems and it offers additional transparency by making the proposed timeline known to all participants. In addition, Silverado Power does not present any reasons to suggest that value exists from SCE attempting to meet the existing deadlines, which is likely impossible. As a result, we find this aspect of the transition plans reasonable, and decline to modify them on the basis of Silverado Power's comments.

As to the projects queued in SDG&E's territory, SDG&E proposes that two groups of projects be studied in two clusters pursuant to the terms of the Revised Rule 21 with the timelines negotiated by SDG&E and the developer. SDG&E's proposal adequately addresses Silverado Power's concerns as SDG&E will study the remaining two projects under the timelines set out in the Independent Study Process in the Revised Rule 21. As a result, we find this aspect of the transition plans reasonable.

9. Comments on Proposed Decision

The proposed decision of ALJ DeAngelis in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on _____, and reply comments were filed on _____ by _____.

10. Assignment of Proceeding

Michel Peter Florio is the assigned Commissioner and Regina DeAngelis is the assigned ALJ in this proceeding.

Findings of Fact

1. The Proposed Settlement responds to issues framed by this rulemaking, to the scoping memo, and to concerns expressed by stakeholders at workshops held prior to the initiation of settlement discussions.

2. The Proposed Settlement responds to issues framed by this rulemaking, including, defining the appropriate interconnection study process for all types of generation resources seeking interconnection to the distribution system, creating distribution-level interconnection procedures for storage technologies, and evaluating and determining appropriate processes for establishing distribution-level interconnection queues (serial or cluster).

3. The Proposed Settlement supports the broad goals of the Commission regarding transparency, predictability, and timeliness of the distribution level interconnection process by presenting improved efficiency and orderliness within interconnection protocols, creating a Fast Track process for smaller generators, confirming that storage facilities are eligible for interconnection evaluation under Rule 21, and relying on both serial and cluster approaches to studying

4. The Proposed Settlement supports state and federal policy goals as the Revised Rule 21 sets forth technical operating and interconnection standards that will continue to ensure the safe and reliable operation of the electric grid.

5. The Proposed Settlement supports interconnection under the Commission's existing renewable energy procurement programs, including, but not limited to, the Net Energy Metering program (Pub. Util. Code § 2827), the Renewable
Feed-In Tariff Program (Pub. Util. Code § 399.20), the Efficient Combined Heat and Power Feed-In Tariff Program (Pub. Util. Code § 2840), and interconnection of QFs, as a general matter the interconnection terms and conditions set out in the federal wholesale tariffs.

6. The Proposed Settlement makes certain recommendations for additional Commission Staff oversight or involvement. These recommendations are requests that the Commission make its best efforts, as it deems appropriate, to implement the recommendations and in no manner do these provisions bind the Commission in either making such efforts or as to the final outcome of such efforts.

7. The Proposed Settlement makes certain recommendations for issues to be included in phase 2 of this proceeding. These recommendations are requests that the Commission make its best efforts, as it deems appropriate, to implement the recommendations and in no manner do these provisions bind the Commission in either making such efforts or as to the final outcome of such efforts.

8. Article 5 of the *Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process*, which includes a reference to the CAISO Tariff's cost allocation scheme for transmission network upgrades,

furthers the Commission's goal of harmonizing state and federal interconnection terms.

9. Under the presently effective Rule 21, no provision exists to govern cost allocation when a generator triggers transmission network upgrades. In this situation, generators would most likely be given the choice to rely on Rule 21, which does not present a process and cost allocation scheme for when transmission upgrades are triggered, or the federal wholesale tariffs, which reference the CAISO Tariff and the cost allocation scheme contained in it. Under the CAISO Tariff's cost allocation scheme, ratepayers are responsible for certain transmission upgrades.

10. DRA's opposition does not identify any cost-shifting to ratepayers.

11. The transition plans submitted by PG&E, SCE and SDG&E present a reasonable means to transition interconnection applicants pending under the presently effective Rule 21 to the Revised Rule 21.

Conclusions of Law

1. The Proposed Settlement is reasonable in light of the whole record because it reasonably responds to the issues framed by this rulemaking, the scoping memo, and issues identified by stakeholders at Commission workshops, and, in addition, furthers the broader goals of the Commission to achieve greater transparency, predictability, and timeliness of the distribution level interconnection process as set out in Rule 21.

2. The Proposed Settlement is consistent with the law as it furthers existing renewable energy procurement programs, including, but not limited to, the Net Energy Metering program (§ 2827), the Renewable Feed-In Tariff Program (§ 399.20), the Efficient Combined Heat and Power Feed-In Tariff Program (§ 2840), and QF interconnection, generally.

3. The Proposed Settlement serves the public interest by supporting state and federal policy goals because the Revised Rule 21 sets forth technical operating and interconnection standards for distributed generation that will continue to ensure the safe and reliable operation of the electric grid.

4. The Proposed Settlement serves the public interest by conforming, in certain instances, the Revised Rule 21 to the federal wholesale tariffs.

5. The Proposed Settlement serves the public interest by making certain recommendations for additional Commission Staff oversight of the utilities' implementation of the Revised Rule 21.

6. The Proposed Settlement serves the public interest by recommending issues for phase 2.

7. The Proposed Settlement is reasonable in light of the whole record, consistent with law, and in the public interest. As such, the Proposed Settlement should be adopted in full.

8. DRA's comments in opposition to the Proposed Settlement do not present sufficient cause to reject the Proposed Settlement as no cost-shifting to ratepayers is identified by Article 5 of the Proposed Interconnection Agreement.

9. The transition plans attached to the April 23, 2012 motions filed by PG&E, SCE and SDG&E present a reasonable means of addressing the pending requests for interconnection when the Revised Rule 21 becomes effective by balancing the goal of expediting pending requests under the new protocols with ensuring that an orderly transition occurs.

10. The April 23, 2012 motions by PG&E, SCE, and SDG&E are granted.

11. The March 16, 2012 *Motion for Approval of Settlement Agreement Revising Distribution Level Interconnection Rules and Regulations* is granted.

O R D E R

IT IS ORDERED that:

1. The Proposed Settlement attached to the March 16, 2012 Motion for Approval of Settlement Agreement Revising Distribution Level Interconnection Rules and Regulations (Attachment A) hereto is adopted in full.

2. Within seven days of the effective date of this decision, Pacific Gas and Electric Company (PG&E), Southern California Electric Company (SCE) and San Diego Gas & Electric Company (SDG&E) shall each file a Tier 1 Advice Letter, effective the date filed, implementing (1) the Revised Rule 21 Tariff, (2) the separate *Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process* for PG&E, SCE and SDG&E, and (3) the separate *Rule 21 Exporting Generating Facility Interconnection Request* for PG&E, SCE, and SDG&E, which are all attached to the *Motion for Approval of Settlement Agreement Revising Distribution Level Interconnection Rules and Regulations* filed on March 16, 2012 (Attachment A hereto).

3. Pacific Gas and Electric Company's *Motion to Adopt a Rule 21 Transition Plan* (Attachment B), Southern California Electric Company's *Motion to Adopt Transition Plan* (Attachment C), and San Diego Gas & Electric Company's *Motion Concerning Transition Plan* (Attachment D) are adopted in full.

4. Pacific Gas and Electric Company (PG&E's), Southern California Electric Company (SCE) and San Diego Gas & Electric Company (SDG&E) shall implement the transition plans, which are included with their separate April 23, 2012 motions, PG&E's *Motion to Adopt a Rule 21 Transition Plan*, SCE's *Motion to Adopt Transition Plan*, and SDG&E *Motion Concerning Transition Plan*, and

attached hereto (Attachments B, C, and D), immediately upon the effective date of the Revised Rule 21.

5. Rulemaking 11-09-011 remains open.

This order is effective today.

Dated _____, at San Francisco, California.

ATTACHMENT A

DRAFT

FILED
03-16-12
04:59 PM

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's own motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources.

Rulemaking 11-09-011
(Filed September 27, 2011)

MOTION FOR APPROVAL OF SETTLEMENT AGREEMENT REVISING DISTRIBUTION LEVEL INTERCONNECTION RULES AND REGULATIONS

Kevin Fox
Sky Stanfield
Tim Lindl
KEYES & FOX LLP
436 14th Street, Suite 1305
Oakland, CA 94612
Telephone: (510) 314-8201
Facsimile: (510) 225-3848
E-mail: kfox@keyesandfox.com
E-mail: sstanfield@keyesandfox.com
E-mail: tlindl@keyesandfox.com

Attorneys for the
Interstate Renewable Energy Council, Inc.

Dated March 16, 2012

TABLE OF CONTENTS

TABLE OF AUTHORITIES ..... **ii**

I. FACTUAL AND PROCEDURAL BACKGROUND **2**

A. The Settlement Agreement Continues the Work of the Rule 21 Working Group 2

B. Rule 21 Affects the Achievement of State Policy Goals for Distribution-Level Resources 3

C. Description of the Settlement Process 4

II. SUMMARY OF THE PROPOSED SETTLEMENT AGREEMENT **5**

A. Adoption of the Revised Tariff and Standardized Forms 5

B. Phasing, Interdependency, and Procedural Recommendations 6

C. Coordination with the Federal Energy Regulatory Commission 8

D. Reporting and Accountability 8

III. THE SETTLEMENT IS REASONABLE AND IN THE PUBLIC INTEREST **9**

A. The Settlement is Reasonable in Light of the Whole Record 10

1. Provisions Based on Existing Rule 21 11

2. Provisions Based on the WDAT and SGIP 12

3. New Provisions 13

B. The Settlement is Consistent with the Law 15

C. The Settlement is in the Public Interest 16

IV. THE JOINT SETTLEMENT PARTIES HAVE COMPLIED WITH THE REQUIREMENTS OF RULE 12.1(b) **16**

V. HEARINGS ARE NOT REQUIRED **16**

VI. THE JOINT SETTLEMENT PARTIES STIPULATE TO THE PARTICIPATION OF COMMISSION STAFF IN AN ADVISORY ROLE IN THE OIR **17**

VII. CONCLUSION **17**

APPENDIX A

SUMMARY OF THE PROPOSED RULE 21 REVISED TARIFF **A-1**

SUMMARY OF THE PROPOSED RULE 21 INTERCONNECTION AGREEMENTS **B-1**

SUMMARY OF THE PROPOSED RULE 21 INTERCONNECTION REQUEST FORMS **C-1**

TABLE OF AUTHORITIES

FERC DECISIONS AND ORDERS

Order Conditionally Accepting Tariff Revisions and Denying Motions 12, 13
Standardization of Small Generator Interconnection Agreements and Procedures 13

CALIFORNIA PUBLIC UTILITIES COMMISSION DECISIONS AND ORDERS

D.00-12-037 3
D.09-10-017 9
D.11-12-053 ..... 9, 10, 15
Order Instituting Rulemaking 11-09-011 ..... 3, 4, 11
Re Pacific Gas & Electric Company 10

CPUC RULES OF PRACTICE AND PROCEDURE

Rule 12.1(a) 1
Rule 12.1(b) 4, 16
Rule 12.1(d) 9

MISCELLANEOUS

Comparison of the Four Leading Small Generator Interconnection Procedures 13
FERC Small Generator Interconnection Procedures A-19
Motion of the Vote Solar Initiative to Adopt an Interim Procedure 7, A-15, B-3
Pacific Gas & Electric Company Wholesale Distribution Tariff B-1, C-1
Rule 21 Tariffs ..... passim
Settlement Conference Communication Pursuant to CPUC Rule 12 16
Southern California Edison Wholesale Distribution Access Tariff..... passim
Updating Interconnection Screens for PV System Integration 14

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's own motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources.	Rulemaking 11-09-011 (Filed September 27, 2011)

MOTION FOR APPROVAL OF SETTLEMENT AGREEMENT REVISING DISTRIBUTION LEVEL INTERCONNECTION RULES AND REGULATIONS

Pursuant to Rule 12.1(a) of the California Public Utilities Commission (CPUC or Commission) Rules of Practice and Procedure, the Joint Settlement Parties[1] request that the Commission approve the attached Settlement Agreement,[2] which includes a revised Rule 21 Tariff (Revised Tariff), interconnection agreements for each investor-owned utility (IOU) (Interconnection Agreements) and interconnection request forms for each IOU (Interconnection Requests) (the latter two shall be referred to in this Motion as Standardized Forms). This *Motion for Approval of Settlement Agreement Revising Distribution Level Interconnection Rules and Regulations* (Motion) provides a statement of the factual and legal considerations that are addressed in the Settlement Agreement. The Joint Settlement Parties believe the Settlement Agreement represents a balance of the parties' interests that is reasonable in light of the whole record, consistent with law, and in the public interest.

---

[1] The settlement parties include Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E) and Southern California Edison Company (SCE) (jointly, the IOUs), as well as Aloha Systems Incorporated, California Farm Bureau Federation, Center For Energy Efficiency And Renewable Technologies, Clean Coalition, Interstate Renewable Energy Council Inc., Sierra Club, Solar Energy Industries Association, SunEdison, Sunlight Partners, Sustainable Conservation, and The Vote Solar Initiative (collectively, Joint Settlement Parties).

[2] The Settlement Agreement is attached to this Motion.

Electric Rule 21 (Rule 21) has successfully facilitated the interconnection of tens of thousands of net energy metered (NEM) and non-exporting generating facilities within California. However, Rule 21 in its present form is not designed to facilitate the interconnection of large numbers of generating facilities that export significant amounts of electric power to the State's electric distribution and transmission systems, or to interconnect energy storage devices. Recently, the Commission has implemented a number of new procurement programs targeting smaller scale renewable generators, combined heat and power (CHP) facilities, and new technologies, such as energy storage. Given the existing limitations of Rule 21, an updated distribution-level interconnection process is necessary to support the success of these programs.

During the past seven months, a diverse group of stakeholders, Commission Staff, and the state's largest IOUs have worked collaboratively in a consensus-based process to update Rule 21 so that the tariff may better facilitate the interconnection of exporting generating facilities and storage technologies. The result of those discussions is a proposed Settlement Agreement that maintains the safety, reliability and power quality of the state's electric distribution and transmission systems while balancing the need for transparent requirements and procedures to make the generating facility interconnection process as predictable, timely and reasonably priced as possible.

I. FACTUAL AND PROCEDURAL BACKGROUND

A. The Settlement Agreement Continues the Work of the Rule 21 Working Group

Since 2000, California has taken a collaborative approach to developing procedures aimed at allowing efficient interconnection and ensuring safe and reliable operation of the utility-

owned distribution systems.[3] This collaborative approach, known as the Rule 21 Working Group, has resulted in important revisions to the IOUs' distribution-level interconnection tariffs over the past decade. The Settlement Agreement is a continuation of these efforts that addresses technical and procedural gaps in the existing Rule 21 tariff.

B. Rule 21 Affects the Achievement of State Policy Goals for Distribution-Level Resources

The existing Rule 21 tariff was last redesigned in 2000, and the primary intent at that time was to facilitate the interconnection of generating facilities that either do not export power to the utility electric distribution system, or that engage in net energy metering arrangements.[4] The existing Rule 21 tariff was not designed to facilitate the interconnection of a significant volume of exporting generating facilities that participate in wholesale sales arrangements. As a result, the existing Rule 21 tariff has left exporting projects that seek to participate in the Commission's renewable and CHP procurement programs without an effective and transparent path to interconnect under Rule 21.[5] Gaps in the existing Rule 21 tariff also exist for the interconnection of new technologies, such as energy storage.[6] Order Instituting Rulemaking 11-09-011 (OIR) acknowledges that the lack of effective and transparent interconnection procedures will only become more acute as the Commission fully implements California's renewable and CHP programs.[7] The OIR aims to "address the key policy and technical issues essential to

---

[3] *See* D.00-12-037 (December 21, 2000) (adopting a revised Rule 21 that was written by a working committee comprised of representatives from intervenor parties, the IOUs, the California Energy Commission and the CPUC).

[4] *See id.*

[5] Order Instituting Rulemaking 11-09-011 at 2-4 (September 22, 2011) (OIR).

[6] *Id.* at 2.

[7] *Id.* at 5.

timely, non-discriminatory, cost-effective and transparent interconnection" to the distribution system.[8] The Settlement Agreement responds squarely to these directives.

C. Description of the Settlement Process

In August 2011, the Commission initiated an effort to reach settlement on distribution-level interconnection issues. The settlement effort emerged from two Rule 21 Working Group meetings on April 29 and August 19, 2011. At the latter meeting, CPUC Staff and counsel encouraged parties to enter settlement negotiations to reach consensus on needed modifications more efficiently and with reduced risk of litigation.

Consistent with Rule 12.1(b), on August 23, 2011, Commission Staff provided notice of the settlement negotiations to the attendees of the Rule 21 Working Group and to parties to CPUC Service Lists R.10-05-004, R.11-05-005, R.08-08-009, R.08-06-024, and A.08-11-001.[9] The notice encouraged all parties interested in interconnection issues to participate in the settlement discussions.[10] Any party with a demonstrable interest in the settlement discussions could join at any time by simply submitting an email to Commission Staff and agreeing to the settlement's procedural rules.[11] The notice specified that the settlement discussions would take place under CPUC and Federal Energy Regulatory Commission (FERC) settlement rules (CPUC Rules of Procedure 12.1 through 12.7, and FERC Rule 602 (18 CFR § 385.602)), including the confidentiality provisions included therein.[12] The OIR also contemplated that it might be used by the Commission as the procedural forum for the settlement efforts.[13] The settlement efforts have been conducted in parallel, and are in addition, to the OIR.

---

8 *Id.* at 5.
9 *Id.* at Attachment D.
10 *Id.*
11 *Id.*
12 *Id.*
13 *Id.* at 2.

The Joint Settlement Parties have worked diligently, conducting frequent and lengthy meetings, to negotiate the Settlement Agreement now presented to the Commission. Numerous issues required resolution, as the Joint Settlement Parties represent diverse interests that have differing perspectives on how best to balance the need to maintain the safety, reliability and power quality of the state's electric power systems with the need to provide a timely, non-discriminatory, cost-effective and transparent process for generating facilities to interconnect to the state's electric distribution systems. The Joint Settlement Parties and Commission Staff have worked intensively throughout the settlement process to discuss and resolve these differences and avoid resource-consuming litigation. Those efforts have resulted in a significant revision of Rule 21 and the development of related documents that maintain distribution and transmission grid safety, reliability and power quality while balancing the need for a more timely, efficient and transparent interconnection process without delay. The Settlement Agreement provides both essential immediate reforms to support Commission programs and a clear and appropriate path for further improvements anticipated in the subsequent second phase of this proceeding.

II. SUMMARY OF THE PROPOSED SETTLEMENT AGREEMENT

This section provides a summary of the key provisions of the Settlement Agreement. The Settlement Agreement governs any inconsistencies between this section of the Motion and the Settlement Agreement itself.

A. Adoption of the Revised Tariff and Standardized Forms

Article II.A of the Settlement Agreement states that the Commission should adopt the Revised Tariff and Standardized Forms expeditiously and that the IOUs should implement those documents immediately thereafter.[14] It further states that the Joint Settlement Parties' support of

[14] Settlement Agreement, Article II.A.

the Settlement Agreement is contingent upon the Commission's adoption of the procedural recommendations discussed below.[15]

B. Phasing, Interdependency, and Procedural Recommendations

Recognizing the time sensitivity and complexity of achieving the OIR's directives, the Settlement Agreement divides required tasks into two interdependent phases.[16] Phase 1 involved the development of the Revised Tariff and Standardized Forms, which are the subject of this motion.[17] According to the Settlement Agreement, the Commission should commence Phase 2 no later than immediately following adoption of the Revised Rule 21 Tariff and Standardized Forms.[18]

Phase 1 of the Settlement Agreement is contingent upon the Commission's acceptance of a number of procedural recommendations regarding Phase 2.[19] The Joint Settlement Parties will be released from the obligations of the Settlement Agreement if the Commission does not accept these recommendations.[20] However, nothing in the Settlement Agreement is intended to prohibit the IOUs from making updates to the Revised Tariff or Standardized Forms in the normal course of business, pursuant to Commission rules, regulations and decisions.[21]

The Settlement Agreement recommends that the Commission conduct Phase 2 as an open, public rulemaking.[22] The Settlement Agreement also recommends that the Commission initiate Phase 2 by issuing a Scoping Memo that includes the following issues:

1. Telemetering/other metering requirements.

---

15 *Id.*
16 *Id.*, Article II.B.
17 *Id.*
18 *Id.*, Article II.B-C.
19 *Id.*, Article II.E.
20 *Id.*
21 *Id.*, Article II.I.
22 *Id.*, Article II.C.

2. Reconsideration of technical limits within Rule 21: Fast Track size limits, 15% screen, development of further objective criteria.

3. Cost allocation and certainty issues including but not limited to: earlier cost certainty, cost averaging, cost sharing, distribution system upgrades appropriate for rate-based support, data reporting to improve cost predictability, cost assignment of planned distribution system upgrades, curtailment as a method of avoiding triggered upgrades, development of an online portal for applying for a Pre-Application Report.

4. Study deposits, pursuant to which the IOUs shall collect and provide data on the actual cost of system impact studies and facilities studies.

5. Development of the distribution group study process.

6. Reconsideration of timelines, timeline compliance, and timeline remedies in the Revised Tariff, if and only if a party reasonably establishes the need for reconsideration.

7. Interim issues not approved as set out in the *Motion of the Vote Solar Initiative to Adopt an Interim Procedure* filed March 1, 2012 (Vote Solar Motion).[23]

The Settlement Agreement highlights cost certainty as a high Phase 2 priority.[24] More specifically, it states, "the key [cost certainty] issues are (1) the variability of potential costs, and (2) the potentially lengthy time frame before final costs are known, including the fact that the [Revised Tariff] allows the developer to execute an interconnection agreement and get interconnected before having a final cost estimate."[25] The Settlement Agreement further

---

23 *Id.*, Article II.D and Attachment B; *Motion of the Vote Solar Initiative to Adopt an Interim Procedure*, R.11-09-011 (March 1, 2012) (Vote Solar Motion).

24 Settlement Agreement, Article II.H.

25 *Id.*

recommends that the Commission conclude Phase 2 as expeditiously as possible, ideally within nine months of its commencement.[26]

C. Coordination with the Federal Energy Regulatory Commission

The Revised Tariff and Standardized Forms may require the IOUs to revise their FERC-jurisdictional wholesale interconnection tariffs (WDATs) to accommodate applicants that are studied in the transmission cluster study process and choose a CPUC-jurisdictional interconnection agreement.[27] If necessary, the IOUs will seek approval at FERC of the required WDAT revisions upon the Commission's adoption of the Settlement Agreement.[28] Joint Settlement Parties agree to support, or not object to, these IOU filings at FERC.[29]

D. Reporting and Accountability

Article II.G of the Settlement Agreement includes a commitment from Commission Staff to work with parties to develop quarterly, public reporting requirements related to each IOUs' compliance with the Revised Tariff and its timelines.[30] Attachment C of the Settlement Agreement contains minimum engineering review data that Commission Staff has agreed to include in a reporting proposal that will be issued in the OIR.[31] The engineering review data requirements attempt to provide greater clarity on the reasons why an interconnection request was deemed to require a certain level of review, including which specific screens the request passed or failed and the time required for a distribution provider to complete interconnection

---

26 *Id.*, Article II.C.

27 The IOUs use different titles for their FERC-jurisdictional tariffs. SCE and SDG&E use "Wholesale Distribution Access Tariff" and PG&E uses "Wholesale Distribution Tariff". For ease of reference, the Motion will refer to each of these tariffs as "WDAT."

28 Settlement Agreement, Article II.F.

29 *Id.*

30 *Id.*, Article II.G.1-4.

31 *Id.*, Attachment C, §§ 7-9.

system impact studies and facilities studies[32] Article II.G also recommends that the Commission direct the Consumer Affairs Branch to be specifically trained to handle disputes regarding missed timelines.[33] It further recommends a ten-business-day deadline to commence timeline-related hearings in the Commission's Alternative Dispute Resolution Program, and it includes a commitment from CPUC Staff to monitor and report on the results of interconnection-related disputes.[34]

III. THE SETTLEMENT IS REASONABLE AND IN THE PUBLIC INTEREST

The Commission will approve a settlement if it finds that the settlement is "reasonable in light of the whole record, consistent with law, and in the public interest."[35] The Commission generally favors settlements to decrease the expense of litigation, conserve Commission resources and reduce the risk that litigation will produce an unacceptable result.[36] A strong public policy favoring settlements dictates that the Commission consider individual provisions within a settlement but not base its conclusion "on whether any single provision is necessarily the optimal result."[37] Rather, the Commission determines "whether the settlement as a whole produces a just and reasonable outcome."[38]

The proposed Settlement Agreement meets these criteria. The Joint Settlement Parties negotiated in good faith and agreed to the Settlement Agreement as an interrelated package.

---

32 *Id.*, Attachment C.
33 *Id.*, Article II.G.5.
34 *Id.*, Article II.G.6-7.
35 Rule 12.1(d) of the Commission's Rules of Practice and Procedure; *See Application of Pacific Gas & Electric Company for Approval of a Power Purchase Agreement with Mariposa Energy*, D.09-10-017d, 2009 Cal. PUC Lexis 531, *7-*17 (Oct. 15, 2009).
36 *Application of Pacific Gas & Electric Company to Revise Its Electric Marginal Costs, Revenue Allocation, and Rate Design, including Real Time Pricing, to Revise its Customer Energy Statements, and to Seek Recovery of Incremental Expenditures*, D.11-12-053, 2011 Cal. PUC Lexis 585, *106 (Dec. 15, 2011) (PG&E Rate Case).
37 *Id.* at *108.
38 *Id.* at *109.

Thus, the Commission, in evaluating the Settlement Agreement, should evaluate it as a package. Each element of the Settlement Agreement is related to all others, and any change to the resolution of one issue may upset the balance that the entire package represents and undermine support for the Settlement Agreement by the Joint Settlement Parties.

In reviewing proposed settlements, the Commission generally considers "(1) the risk, expense, complexity and duration of further litigation, (2) whether the settlement negotiations were at arms-length, (3) whether major issues were addressed, and (4) whether the parties were adequately represented."[39] Here, the Joint Settlement Parties represent diverse interests and were able to make informed choices based on arms-length settlement negotiations that addressed complex matters.

A. The Settlement is Reasonable in Light of the Whole Record

The Commission has found a settlement to be reasonable when parties represent a wide variety of interests affected by the settled issues, and the outcome constitutes a reasonable compromise between parties' positions.[40] The record in this proceeding is limited due to the confidential nature of the settlement negotiations and the fact that little development of the record occurred outside of those negotiations. Despite this limited record, the Joint Settlement Parties represent a diverse group of IOU, ratepayer, distributed generation advocate, environmental and developer interests. Parties to the settlement actively participated in the negotiations, advocating positions based on rigorous analysis and technical support. As an outcome of these negotiations, Parties made a number of concessions relative to their initial positions on the issues of concern to them in order to reach agreement.

---

[39] *Id.* at *109 (citing *Re Pacific Gas & Electric Company*, 30 CPUC2d 189, 222 (Dec. 19, 1988)).

[40] *PG&E Rate Case* at *108, 110-111.

The end result of the proceeding must maintain the safety, reliability and service quality of the state's electric power systems. That result is not incompatible with the provision of transparent requirements, procedures, timelines and agreements to make the process of interconnecting a generator as predictable, timely and reasonably priced as possible. Well-developed interconnection procedures focus on achieving a reasonable balance between these interests. The Settlement Agreement meets this standard.

Provisions in the Revised Tariff and Standardized Forms can be divided into three categories: (1) existing Rule 21 provisions; (2) provisions imported from the FERC-jurisdictional WDATs and the FERC Small Generator Interconnection Procedures (SGIP); and (3) newly created provisions. The Joint Settlement Parties carefully considered and negotiated each of these existing provisions, modifications and additions to the Revised Tariff. The result is a significant advancement in California's interconnection rules. A summary of the Revised Tariff and Standardized Forms is provided in Appendix A to this Motion.

1. Provisions Based on Existing Rule 21

The Revised Tariff maintains a number of provisions from the existing Rule 21 Tariff. As stated in the OIR, Rule 21 has successfully governed the interconnection of tens of thousands of non-exporting and NEM generators to the state's distribution system.[41] The existing tariff represents the cumulative experience of California generators and distribution providers in meeting the state's interconnection needs. The Revised Tariff maintains the procedures and technical screens that have contributed to Rule 21's past success and is therefore consistent with the existing tariff. For example, eight of the Revised Tariff's Initial Review screens (Screens A, B, C, F, H, I, J, and M) are unmodified from the current Rule 21. In addition, Subsection F.5 (Commissioning Testing and Parallel Operation), Section H (Generating Facility Design and

[41] OIR at 4.

Operating Requirements), Section I (Third-Party Installations, Reservation of Unused Facilities, and Refund of Salvage Value), Section J (Metering, Monitoring and Telemetering), Section K (Dispute Resolution Process), Section L (Certification and Testing Criteria), numerous definitions in Section C (Definitions), and Subsections 1-6 and 8-9 in Section D (General, Rules, Rights and Obligations) are unmodified from existing Rule 21, except for changes conforming to other revisions to in the Revised Tariff. Appendix III of this Motion provides a more specific discussion of the provisions that are maintained from the existing tariff. These provisions incorporate into the Revised Tariff California's considerable interconnection experience, which has successfully balanced the divergent interests of distribution providers and interconnection applicants for a number of years.

2. Provisions Based on the WDAT and SGIP

The Revised Tariff incorporates, to the extent possible, a number of provisions from the IOUs' FERC-jurisdictional WDATs and the FERC SGIP to promote compatibility between federal and state interconnection processes. The result is a Revised Tariff that better aligns Rule 21 with other interconnection procedures in California and builds upon utility experience in interconnecting distribution-level generating facilities.

The WDATs are also the IOUs' most recent update to distribution-level interconnection procedures. The IOUs filed revisions to their WDATs at FERC in Spring 2011. The revisions coordinate the WDAT interconnection procedures with those at the California Independent System Operator (CAISO) in order to "achieve the greatest level of efficiency in interconnection to both [the transmission and distribution] systems."[42] FERC found the utility WDATs to be a

[42] *Order Conditionally Accepting Tariff Revisions and Denying Motions*, 135 FERC ¶ 61,093 at P 2 (Apr. 29, 2011) (accepting SCE's revised WDAT).

just and reasonable compromise between competing interconnection interests.[43] Incorporating provisions from these WDAT tariffs into Rule 21 will help ensure that these recent refinements are reflected in the Revised Tariff.

It is also reasonable to incorporate provisions included in the FERC SGIP procedures. Utilities, regulators, renewable energy advocates, industry, and government experts from numerous states participated in drafting the FERC SGIP.[44] As such, it reflects the accumulated experiences of entities that have interconnected large numbers of facilities throughout the country. The SGIP is one of the most widely used model interconnection procedures in the nation for the development of state interconnection rules.[45]

Key examples of provisions that are imported or modified from the IOUs' WDATs or the FERC SGIP include the Standardized Forms, Subsection D.7 (Confidentiality), Subsection E.3.a (Detailed Study Deposit), Subsection F.3.c-d (Transmission Cluster Study Process and Independent Study Process) and Subsection F.4 (Interconnection Financial Security). Appendix A provides a more detailed discussion of the precise sections that include provisions taken from FERC-jurisdictional procedures. These provisions make the Revised Tariff and Standardized Forms consistent with other interconnection procedures in California and build on national interconnection experience.

3. New Provisions

Parties worked cooperatively to identify problematic areas in Rule 21 and collaborated to develop solutions that reflect market and system realities in California. Some key examples of

---

43 *See, e.g., id.*

44 *See Standardization of Small Generator Interconnection Agreements and Procedures*, FERC Order No. 2006, Appendix A (May 12, 2005).

45 Keyes, Jason B. and Fox, Kevin T., *Comparison of the Four Leading Small Generator Interconnection Procedures*, (October 2008) (available at: http://www.solarabcs.org/about/publications/reports/interconnection/pdfs/ABCS-07_studyreport.pdf).

new provisions are discussed in the subsections below. Appendix A provides a more specific discussion of the precise sections that include new provisions.

a. Supplemental Review and Associated Technical Screens

The Revised Tariff incorporates a new Supplemental Review process that will provide greater transparency with regard to what transpires in Supplemental Review and, therefore, which systems will be able to interconnect without Detailed Study. An increase in transparency will produce less confusion and delays and reduce transaction costs. A transparent procedure also serves to reduce the expense to utilities in managing interconnection requests, especially to the extent that it reduces the time utility employees must devote to each interconnection request. Beyond transparency, the Supplemental Review process will also allow more opportunities for expedited review, which, in turn, allows more projects to efficiently interconnect.

Although Supplemental Review creates more opportunities for expedited review, it balances those opportunities with new technical screens that maintain safety, reliability and power quality standards. As interconnections are expedited and the amount of distributed generation increases, one major concern that has caused detailed study in the past is the impact of new generation on voltage levels and equipment.[46] The three Supplemental Review technical screens will address these issues in the Revised Tariff. The Penetration Test (Screen N) ensures that power flow from the circuit back toward the substation will have a minimal impact on equipment loading, operation and protection of the distribution system. The Safety and Reliability Test (Screen P) assesses whether safety and reliability considerations can be adequately addressed without the need for a Detailed Study. The Power Quality and Voltage

[46] Coddington, Michael, Mather, Barry, Kropski, Benjamin, Lynn, Kevin, Razon, Alvin, Ellis, Abraham, Hill, Roger, Key, Tom, Nicole, Kristen, and Smith, Jeff, *Updating Interconnection Screens for PV System Integration*, National Renewable Energy Laboratory, pages 3-5 (January 2012) (available at: http://energy.sandia.gov/wp/wp-content/gallery/uploads/Updating_Interconnection_PV_Systems_Integration.pdf).

Test (Screen O) ensures that voltage is kept at normal operating conditions, and the interconnecting generating facility will not cause other customers to experience adverse voltages and undesirable interference.

b. Other New Provisions

Supplemental Review is not the only area in the tariff where parties created innovative solutions to fill gaps in the existing Rule 21. The Optional Initial and Supplement Review Results Meetings (Subsections F.2.b and F.2.d), the strict timelines throughout Section F, and the Pre-Application Report (Subsection E.1) are key examples of other new provisions. These sections of the Revised Tariff will increase communication and responsiveness for both the IOU and the interconnection applicant. These provisions promote the goal of transparent requirements and procedures to make the process of interconnecting a generator as predictable, timely and reasonably priced as possible.

B. The Settlement is Consistent with the Law

A settlement meets the Commission's standard to comply with the law if it does not contravene California statutes or CPUC precedent.[47] The Joint Parties are not aware of any state statute or Commission decision that prohibits any of the provisions in the Settlement Agreement, Revised Tariff or Standardized Forms.

A settlement is consistent with the law if it promotes the achievement of state and Commission policy goals.[48] As discussed at length above and in Appendix A, the Revised Tariff and Standardized Forms will make the process of interconnecting distribution-level generation more predictable, timely and reasonably priced. Renewable, CHP, energy storage and

---

[47] *PG&E Rate Case* at *109.
[48] *Id.*

procurement programs targeting distribution-level generators will benefit from the Commission's approval of the Settlement Agreement.

C. The Settlement is in the Public Interest

A reasonable settlement that is consistent with the law is inherently in the public interest. There is no doubt that the Settlement Agreement has decreased potential litigation expenses and preserved Commission resources. The settlement is a detailed, thoughtfully considered set of documents that deals with complex and technical issues. The achievement of such a settlement in less than seven months is extraordinary. Moreover, the Settlement Agreement reduces the risk of continued litigation and controversy, which, at the very least, would result in further delay of successful implementation of important procurement programs.

IV. THE JOINT SETTLEMENT PARTIES HAVE COMPLIED WITH THE REQUIREMENTS OF RULE 12.1(b)

Rule 12.1(b) of the Commission's Rules of Practice and Procedure requires parties to provide a notice of a settlement conference at least seven days before a settlement is signed. On March 8, 2012, the Joint Settlement Parties notified all of the parties on the service list in this proceeding of a settlement conference and subsequently convened the settlement conference on March 15, 2012 to describe and discuss the terms of the proposed Settlement Agreement.[49] Representatives of the Joint Settlement Parties participated in the settlement conference. After the settlement conference was concluded, the Settlement Agreement was finalized and executed on March 15, 2012.

V. HEARINGS ARE NOT REQUIRED

The Joint Settlement Parties respectfully request that the Commission approve the Settlement Agreement without evidentiary hearings as there are no disputed issues of material

[49] *Settlement Conference Communication Pursuant to CPUC Rule 12*, R.11-09-011 (March 8, 2012) (served by PG&E).

fact related to the Settlement Agreement that require hearings. In addition, hearings would prevent the expeditious approval of the Settlement Agreement, which would hinder parties from making progress in ongoing discussions, delay any necessary IOU filings at FERC, prevent the initiation of Phase 2, and, most importantly, hamper the Commission's ability to successfully implement important procurement programs.

VI. THE JOINT SETTLEMENT PARTIES STIPULATE TO THE PARTICIPATION OF COMMISSION STAFF IN AN ADVISORY ROLE IN THE OIR

As noted above, in August 2011, Commission Staff encouraged the Joint Settlement Parties to undertake negotiated settlement of distribution interconnection issues. Commission Staff subsequently provided significant support to the settlement discussions, which took place under CPUC and FERC confidentiality rules. As proposed in the Settlement Agreement, Phase 2 of reforms to Rule 21 will build upon the reforms proposed in the Settlement Agreement, addressing cost responsibility, metering, and other issues. In this instance, in order to conserve staffing resources and bring Commission Staff expertise in distribution interconnection issues to bear in the OIR, the Joint Settlement Parties stipulate that any Commission Staff that participated in the settlement discussions may continue to work in an advisory role to the OIR.

VII. CONCLUSION

For the reasons set forth above, the Settlement Agreement is reasonable in light of the record, consistent with law, and in the public interest. The Joint Settlement Parties respectfully request that the Commission approve the Settlement Agreement and its attachments without modification.

//

//

//

Respectfully submitted on behalf of the Joint Settlement Parties,

March 16, 2012

/s/ Kevin Fox

Kevin Fox
Sky Stanfield
Tim Lindl
KEYES & FOX LLP
436 14th Street, Suite 1305
Oakland, CA 94612
Telephone: (510) 314-8201
Facsimile: (510) 225-3848
E-mail: kfox@keyesandfox.com
E-mail: sstanfield@keyesandfox.com
E-mail: tlindl@keyesandfox.com

Attorneys for the
Interstate Renewable Energy Council, Inc.

APPENDIX A

SUMMARY OF THE PROPOSED RULE 21 REVISED TARIFF

The Revised Tariff makes significant revisions and modifications to the existing Rule 21 interconnection tariff.[50] This section provides a summary of modifications made to each section of the Revised Tariff. In addition to the modifications summarized below, conforming changes have also been made to capitalized terms and section references throughout the Revised Tariff to maintain consistency with revisions made in the Revised Tariff. The Revised Tariff governs any inconsistencies between this section and the Revised Tariff itself.

SECTION A: TABLE OF CONTENTS

The Revised Tariff adds a Table of Contents as Section A to illuminate the tariff's framework and simplify navigation within the tariff.

SECTION B: APPLICABILITY

To accommodate the insertion of a Table of Contents as Section A, the Applicability section has been moved from Section A in the existing Rule 21 tariff to Section B in the Revised Tariff. In keeping with the existing Rule 21, Section B serves to: 1) delineate which interconnection requests may proceed under Rule 21, 2) identify where defined terms are located within the tariff, and 3) explain the extent to which the IEEE 1547 Standard for Interconnecting Distributed Resources with Electric Power Systems has been incorporated into Rule 21.

The Revised Tariff separates its discussion of these three issues into subsections B.1 (Applicability), B.2 (Definitions) and B.3 (Applicable Codes and Standards). Subsection B.1 expands on the existing Rule 21 tariff to more clearly state when an applicant may apply for

---

[50] For a complete comparison of the Revised Tariff and the IOUs' presently effective, Commission-approved Rule 21 Tariffs, please see:
PG&E: http://www.pge.com/tariffs/tm2/pdf/ELEC_RULES_21.pdf
SCE: http://www.sce.com/NR/sc3/tm2/pdf/Rule21.pdf
SDG&E: http://regarchive.sdge.com/tm2/pdf/ELEC_ELEC-RULES_ERULE21.pdf

interconnection pursuant to Rule 21 procedures, as opposed to the CAISO procedures or the procedures in a utility's WDAT. Specifically, the Revised Tariff includes the following additional language in Subsection B.1:

> "All Generating Facilities seeking Interconnection with the Distribution Provider's Transmission System shall apply to the California Independent System Operator (CAISO) for Interconnection and be subject to CAISO Tariff except for 1) Net Energy Metering Generating Facilities and 2) Generating Facilities that do not export to the grid or sell any exports sent to the grid (Non-Export Generating Facilities). NEM Generating Facilities and Non-Export Generating Facilities subject to Commission jurisdiction shall interconnect under this Rule regardless of whether they interconnect to Distribution Provider's Distribution or Transmission System"
>
> * * *
>
> "Generating Facility interconnections to the Distribution Provider's Distribution System that are subject to Federal Energy Regulatory Commission (FERC) jurisdiction shall apply under Distribution Provider's WDAT."

Subsections B.2 and B.3 in the Revised Tariff make changes to capitalized terms and section references to maintain consistency with revisions made elsewhere in the Revised Tariff. Subsection B.2 further clarifies that the defined terms in Rule 21 are intended to also apply to the Interconnection Requests, utility study agreements and Interconnection Agreements. Subsection B.3 adds language to clarify that the requirements set forth in Rule 21 take precedence over codes and standards referenced in the tariff, to the extent any inconsistencies between the Revised Tariff and any referenced or relevant codes and standards exist.

SECTION C: DEFINITIONS

The Revised Tariff moves the Definitions from Section H in the existing Rule 21 to Section B in the Revised Tariff so defined terms may be more easily located at the front of the tariff. The Revised Tariff includes a number of modifications to the defined terms to conform them to modifications made elsewhere in the Revised Tariff. Definitions have been added for the following terms:

APPENDIX A

- Affected System
- Affected System Operator
- Affiliate
- Allocated Capacity
- Available Capacity
- Base Case
- Business Day
- CAISO Controlled Grid
- CAISO Tariff
- Calendar Day
- Commercial Operation
- Commercial Operation Date
- Confidential Information
- Conservation Voltage Regulation
- Construction Activities
- Delivery Network Upgrades
- Detailed Study
- Dispute Resolution
- Distribution Group Study Process
- Distribution Provider
- Distribution Upgrades
- Electrical Independence Test
- Energy-Only Deliverability Status
- Engineering and Procurement Agreement
- Export
- Exporting Generating Facilities
- Fast Track Process
- Generating Facility Capacity
- Generator Interconnection Agreement
- Good Utility Practice
- Governmental Authority
- Independent Study Process
- Independent Study Process Study Agreement
- In-Service Date
- Interconnection Customer
- Interconnection Facilities Study

- Interconnection Financial Security
- Interconnection Request
- Interconnection System Impact Study
- Large Generating Facility
- Local Furnishing Bond
- Local Furnishing Distribution Provider
- Material Modification
- Network Upgrades
- Networked Secondary System
- Party, Parties
- Pre-Construction Activities
- Queue Position
- Queued Capacity
- Reasonable Efforts
- Reliability Network Upgrades
- Small Generating Facility
- Site Exclusivity
- Special Facilities
- Spot Network
- Total Capacity
- Transient Stability
- Transmission Cluster Study Process
- Transmission System
- Wholesale Distribution Access Tariff

Definitions have been modified for the following terms:

- Added Facilities
- Applicant
- Application
- Certification Test
- Certified Equipment
- Customer
- Distribution Service
- Distribution System
- Emergency
- Generating Facility
- Interconnection; Interconnected
- Interconnection Agreement
- Interconnection Facilities
- Interconnection Study
- Line Section
- Momentary Parallel Operation
- Net Rating or Net Nameplate Rating
- Non-Export; Non-Exporting
- Parallel Operation
- Paralleling Device
- Point of Interconnection
- Producer
- Section 218 Load
- Single Line Diagram; Single Line Drawing

- Supplemental Review
- System Integrity
- Unsafe Operating Conditions

Definitions have been deleted for the following terms:

- Load Carry Capability
- Network Service
- Point of Common Coupling Metering
- Scheduled Operation Date
- Secondary Network
- Simplified Interconnection

SECTION D: GENERAL, RULES, RIGHTS AND OBLIGATIONS

The Revised Tariff moves existing Rule 21 Section B (General, Rules, Rights and Obligations) to Section D in the Revised Tariff. Subsections D.1-6 and D.8-9 retain the content from Subsections B.1-6 and B.8-9 in the existing Rule 21 but make modifications to capitalized terms and section references to maintain consistency with revisions made elsewhere in the Revised Tariff. In addition, the subsection heading for Subsection D.3 has been modified to clarify that the services that may be applied for under Rule 21 are limited to interconnection services.

Subsection D.7 expands significantly on existing confidentiality provisions presently contained in Rule 21 to include more robust provisions that clarify what information will be considered confidential. The existing Rule 21 simply states that "[a]ny information pertaining to Generating and/or Interconnection Facilities provided to [the distribution provider] shall be treated by [the distribution provider] in a confidential manner." The Revised Tariff builds upon provisions from utility WDATs[51] to more fully state: 1) the scope of information that will be considered confidential, 2) limitations on the scope of what is considered confidential, 3) when

[51] *See, e.g.,* Southern California Edison Wholesale Distribution Access Tariff, Attachment I, § 11.1.

confidential information may be released to the CPUC or FERC, or their respective staff, and 4) other required disclosures.

Subsections D.10 (Local Furnishing Bonds), D.11 (Coordination with Affected Systems), D.12 (Transferability of Interconnection Request), D.13 (Special Provisions Applicable to Net Energy Metered Applicants), D.14 (Compliance with Established Timelines), and D.15 (Modification of Timelines) are new provisions.

Subsection D.10 establishes provisions that address a proposed interconnection request's impairment of the tax-exempt status of "local furnishing bonds," or the deductibility of interest for such bonds, and sets forth requirements that an applicant "pay the costs properly attributable." This provision is in accordance with tariff provisions that require most non-NEM generating facilities to pay for all costs that result from an interconnection request.

Subsection D.11 incorporates and builds upon provisions currently contained in utility WDATs to address the need for a distribution provider to notify and coordinate interconnection studies, if appropriate, with the operators of other grid systems that may be impacted by an interconnection request.

Subsection D.12 addresses circumstance under which an interconnection applicant may transfer its interconnection request to another entity.

Subsection D.13 consolidates sections of the existing Rule 21 that are specific to NEM applicants. Subsection 1 of Subsection D.13 allows a distribution provider to efficiently move a NEM customer through the interconnection review study process, given that a NEM applicant is not responsible for payment of study costs. Subsection 2 expands upon provisions contained in existing Rule 21 Section C.2.d to allow NEM applicants using non-certified and/or non-inverter based generators to submit an interconnection request prior to obtaining final electrical

inspection clearance and to submit an application 6-months in advance of a desired commercial operation date. This subsection provides distribution providers additional time to complete interconnection of such NEM facilities, which may require more time to review to ensure compatibility with safety, reliability and power quality standards. Subsection 3 adds a new requirement that metering equipment necessary to facilitate NEM arrangements shall be installed and operational within the timeframe required to complete interconnection, unless a net generation output meter is required under Revised Tariff Subsection J.3 (Section F.3 in the existing Rule 21 tariff). Subsection 4 incorporates provisions from Section C.1.b(4) in the existing Rule 21 to clarify the circumstances under which a distribution provider may withdraw an interconnection request for a NEM generator if an applicant fails to act in a timely manner to install a NEM facility, execute an interconnection agreement, or begin parallel operation.

Subsections D.14-15 establish requirements for meeting deadlines in the Revised Tariff. Subsection D.14 requires a distribution provider to use "Reasonable Efforts" in meeting all the timelines provided for in the Revised Tariff. Subsection D.15 provides necessary flexibility by allowing a distribution provider and applicant to mutually agree, in writing and for "good cause", to modify the timelines provided in the Revised Tariff. Circumstances outside the reasonable control of the distribution provider and applicant may necessitate extension of tariff timelines despite reasonable efforts by parties to complete their interconnection responsibilities in a timely manner.

SECTION E: INTERCONNECTION REQUEST SUBMISSION PROCESS

The Revised Tariff augments and revises the provisions in the existing Rule 21 tariff that govern the beginning phases of an interconnection request. Section E significantly expands and modifies the language in a number of existing tariff subsections to make more transparent and

predictable the process for submitting a request, the eligibility for different review processes, the associated study fees and deposits, and parties' cost responsibility for interconnection. This section also introduces a pre-application report to make a generator's ability to interconnect at a certain location more predictable, and it clarifies the distribution provider's responsibility to validate an interconnection request and assign a project a queue position once a request is received.

SUBSECTION E.1: Pre-Application Report

Subsection E.1 introduces into the Revised Tariff a pre-application report that will allow an interested applicant to request specific, pre-existing data relevant to a potential point of interconnection. This data is intended to help applicants assess the feasibility of cost-effectively interconnecting a generating facility in a specific location prior to submitting an interconnection request.

SUBSECTION E.2: Interconnection Request Process

Subsection E.2 contains several subsections that clarify the process of submitting an interconnection request. Subsection E.2.a (Applicant Initiates Contact with Distribution Provider) incorporates existing Rule 21 tariff Section C.1.a, making only conforming modifications to defined terms.

Subsection E.2.b (Applicant Selects a Study Process), identifies the two study processes available in the Revised Tariff – Fast Track and Detailed Study – and sets forth the eligibility requirements for each. Specifically:

> "Non-Exporting and Net Energy Metered Generating Facilities are eligible for Fast Track evaluation regardless of the Gross Nameplate Rating of the proposed Generating Facility. Exporting Generating Facilities with a Gross Nameplate Rating no larger than 3.0 MWs on a 12 kV, 16 kV or 33 kV interconnection for Southern California Edison, 1.5 MW on a 12 kV interconnection for San Diego Gas & Electric, and 3.0 MW on a 12 kV or higher interconnection for PG&E are also eligible for Fast Track evaluation."

Exporting generating facilities that agree to the installation of approved protective devices at the applicant's cost will use the generating facility's net export capacity for purposes of determining Fast Track eligibility; provided, however, that these applicants will be required to submit to a Supplemental Review. All other generating facilities will be required to submit an application for Detailed Study. Requests for a "deliverability assessment" to obtain resource adequacy value must proceed under a utility's WDAT.

Subsection E.2.c (Applicant Completes an Interconnection Request) incorporates provisions from existing tariff Sections C.1.b and C.2 to set forth the interconnection fees and deposit amounts that must accompany an interconnection request (see discussion below regarding modifications proposed to existing study fees and deposit amounts).

Subsection E.2.d (Site Exclusivity) requires documentation of site exclusivity to be submitted with the interconnection request, except for requests pertaining to NEM applicants or non-export generating facilities.

SUBSECTION E.3: Interconnection Request Fee and Study Deposit

Subsection E.3 sets forth the interconnection request fees and study deposits that apply under the Revised Tariff. This subsection incorporates provisions from existing Rule 21 tariff Section C.1.d. The Revised Tariff includes an increase in the Supplemental Review fee from $600 to $2,500. The increase in the Supplemental Review fee reflects the estimated average cost to the distribution provider for applying several new technical review screens that have been introduced into the Revised Tariff to allow more interconnection requests to be approved through Fast Track, via Supplemental Review, without the need for Detailed Study.

Whereas Section C.1.d in the current Rule 21 tariff simply provides for an estimation of detailed study deposit amounts, Subsection E.3 in the Revised Tariff incorporates specific detailed study deposits that vary by generator size. For generating facilities with a gross

nameplate rating less than or equal to 5 MW, Subsection E.3 includes detailed study deposit amounts of $10,000 for an interconnection system impact study and $15,000 for a facilities study. For generating facilities with a gross nameplate rating larger than 5 MW, an applicant must submit a deposit equal to $50,000 plus $1,000 per MW of electrical output of the facility. The deposit amount for generating facilities with a gross nameplate rating larger than 5 MW mirrors the detailed study deposit amount charged under the existing SCE and PG&E WDATs.[52] Subsection E.3 also includes provisions regarding the use of detailed study deposits and the refunding of any unused portions. These provisions were largely imported from utility WDATs.[53]

SUBSECTION E.4: Interconnection Cost Responsibility

Subsection E.4 consolidates cost responsibility provisions in existing Rule 21 in an effort to better clarify the cost responsibility of Rule 21 applicants. Specifically, Subsection E.4 consolidates provisions in existing Rule 21 tariff Sections C.1.d, C.2.a, C.2.b, E.1.a, E.1.b, E.2.a, E.2.b, E.2.c, E.2.d, E.3.a, and E.3.b and more clearly articulates the cost responsibility of applicants. Under both existing Rule 21 and the Revised Tariff, an applicant that interconnects to the distribution provider's distribution or transmission system is responsible for all costs associated with parallel operation to support the safe and reliable operation of the distribution and transmission system.

Subsection E.4.a (Costs of Interconnection and Parallel Operation) in the Revised Tariff clarifies the types of costs for which an applicant may be responsible. Subsection E.4.a also clarifies who may own interconnection facilities and where such facilities may be located. Subsection E.4.b (Methodology and Timing of Cost Identification) identifies the potential impact

---

52 *See, e.g., id.*, Attachment I, § 4.2.1.
53 *Id.*

that the processing or withdrawal of earlier-queued interconnection requests may have on an applicant's cost responsibility. Subsection E.4.c (Timing of Cost Identification) clarifies that "costs may be identified during the study process, or after the study process is complete and a Generator Interconnection Agreement is executed." Subsection E.4.d (Producer Costs During Parallel Operation) addresses an applicant's ongoing responsibility for "costs associated with changes to the operating characteristics at the Point of Interconnection necessitated by Distribution Provider's upgrades to the Transmission or Distribution System from time to time." Subsection E.4.e (Cost Allocation) further clarifies that except where exempt by law or Commission decision, costs triggered by an interconnection request under the Fast Track process or the Independent Study Process are the responsibility of the triggering applicant. Subsection E.4.e further explains that the distribution provider's WDAT, or other applicable tariff, governs the allocation of costs triggered by a Rule 21 interconnection request that transitions to the Transmission Cluster Study Process. Finally, Subsection E.4.f (Summary Tables) includes tables summarizing responsibility for costs and fees that may arise in the course of the interconnection process for NEM and non-NEM Applicants. In keeping with current policy, generating facilities eligible for NEM under California Public Utilities Code section 2827, 2827.8 or 2827.10 are exempt from any costs associated with distribution or network upgrades.

SUBSECTION E.5: Interconnection Request Validation and Assignment of Queue Position

Subsection E.5 in the Revised Tariff expands significantly on Section C.1.b(1) in the existing Rule 21 tariff to set forth a distribution provider's responsibilities after an interconnection request is received. Consistent with existing tariff Section C.1.b(1), Subsection E.5.a (Acknowledgement of Interconnection Request) requires a distribution provider to provide written notification to a Rule 21 applicant within ten business days of receipt of an

interconnection request. Subsection E.5.b (Deficiencies in Interconnection Request) establishes a process for rectifying deficiencies in an interconnection request. Subsection E.5.c (Assignment of Queue Position) addresses the assignment of an interconnection queue position for non-NEM applicants. Subsection E.5.d (Publication of the Interconnection Queue) sets forth requirements for the publication of interconnection queue data for interconnection requests that are governed by the tariff and have a point of interconnection on a distribution provider's distribution system. Subsection E.5.d also sets forth specific information that will be published in a distribution provider's interconnection queue, subject to Energy Division approval. Subsection E.5.d will allow for the alignment and consolidation of the separate interconnection request queues that are maintained by the distribution providers under FERC-approved and Commission-approved interconnection tariffs.

SECTION F: REVIEW PROCESS FOR INTERCONNECTION REQUESTS

As compared to the existing Rule 21, the Revised Tariff introduces a more differentiated approach to interconnection review that uses technical review screens to determine the level of review that is appropriate for a particular interconnection request. Section F expands significantly on Sections C.1.c, C.1.d, and C.2 in the existing Rule 21 tariff to add more transparency and certainty with regard to steps necessary to complete the interconnection process. Section F imposes strict timelines on both distribution providers and applicants to complete the steps in an effort to make the process of interconnecting a generator more predictable and timely. Section F also incorporates existing federal interconnection procedures to address financial security, commissioning, testing, parallel operation and withdrawal.

SUBSECTION F.1: Overview of the Interconnection Review Process

Subsection F.1 provides an overview of the interconnection review process that is set forth in detail in Subsections F.1-6. Section F establishes two general approaches for reviewing

interconnection requests: Fast Track and Detailed Study. Fast Track evaluation (*see* Subsection F.1.b) allows for rapid approval of the interconnection of those generating facilities that do not require Detailed Study. Fast Track review consists of an Initial Review and, if required, a Supplemental Review. The need for Supplemental Review is determined based on the results of technical review screens A through M, which are set forth in Revised Tariff Subsection G.1. Applicants that successfully pass initial review screens A through M will be allowed to interconnect without Supplemental Review. Applicants that fail an initial review screen may require Supplemental Review. Supplemental Review consists of the application of technical review screens N through P, which are set forth in Revised Tariff Subsection G.2. Applicants that pass Supplemental Review will be allowed to interconnect without additional review. However, if Supplemental Review reveals that a proposed generating facility cannot be interconnected to the distribution provider's distribution system by means of Fast Track evaluation, the distribution provider will notify the applicant that Detailed Study will be required.

Under the Revised Tariff, Detailed Study (*see* Subsection F.1.c) will be required for interconnection requests that either apply directly for Detailed Study, are not eligible for Fast Track, or do not pass Fast Track evaluation. Detailed Study consists of one of three study processes: (i) Independent Study Process; (ii) Distribution Group Study Process; or (iii) Transmission Cluster Study Process. The specific study process that is applied to a particular interconnection request will depend on the application of technical review screens Q and R in Revised Tariff Subsection G.3. Generating facilities that are electrically interdependent with the transmission system, and thereby fail screen Q, will proceed to the Transmission Cluster Study Process. Generating facilities that pass screen Q will be studied under either the Independent

Study Process or in a Distribution Group Study Process, depending on the application of screen R, which assesses whether dependencies exist with earlier-queued interconnection requests.

Subsection F.1.d (Compliance with Timelines) requires the distribution provider to use "reasonable efforts" in meeting all the timelines provided for in the Tariff. In the event the distribution provider is not able to meet a particular timeline set forth in Section F, the distribution provider must notify the applicant as soon as practicable and provide an estimated completion date with an explanation of the reasons why additional time is needed. Any applicant dissatisfied with the reasonable efforts of the distribution provider may use informal dispute resolution procedures set forth in this Section and/or the dispute resolution process in Section K of the Revised Tariff.

SUBSECTION F.2: Fast Track Interconnection Review Process

Subsection F.2 establishes the requirements and timeframes for the Fast Track interconnection review process, which may consist of: 1) Initial Review; 2) an optional Initial Review results meeting; 3) Supplemental Review, if required; 4) an optional Supplemental Review results meeting; and 5) execution of a generator interconnection agreement.

SUBSECTION F.3: Detailed Study Interconnection Review Process

Subsection F.3 establishes requirements and timeframes for the Detailed Study interconnection review process. Subsection F.3.a (Detailed Study Track Selection Process) sets forth the process for determining the appropriate Detailed Study process that should be applied to a specific interconnection request. Subsections F.3.b (Distribution Group Study Process), F.3.c (Transmission Cluster Process), and F.3.d (Independent Study Process) establish the requirements and timeframes applicable to the three Detailed Study processes.

Subsection F.3.b (Distribution Group Study Process) is not finalized. The Joint Settlement Parties propose to develop detailed procedures for a Distribution Group Study Process subsequent to the filing of the instant motion. The Vote Solar Initiative filed a separate Motion on March 1, 2012 seeking permission for the Joint Settlement Parties to continue efforts begun during negotiations that are still unresolved.[54] One of the three interim issues that parties seek to address is the development of a Distribution Group Study Process.[55] Upon approval of the Vote Solar Motion, the IOUs, and any other party, may submit a proposal for a Distribution Group Study Process within the OIR.[56] In the interim, the provisions presently inserted in Subsection F.3.b are intended to redirect applicants that would otherwise be eligible for this process to either the Transmission Cluster Process or the Independent Study Process until such time as a Distribution Group Study Process can be developed.

Subsection F.3.c (Transmission Cluster Process) sets forth the process for the withdrawal under Rule 21, and submittal under a WDAT, of interconnection requests that are determined to have interdependencies with the state's electric transmission system.

Subsection F.3.d (Independent Study Process) establishes detailed procedures for the Independent Study Process. The existing Rule 21 provides very little clarity or transparency with regard to how detailed study is conducted or the timeframe within which it should be completed. The existing Rule 21 also does not address the manner in which deposits and interconnection financial security will be posted or refunded, if appropriate. Subsection F.3.d in the Revised Tariff draws heavily from the independent study processes contained in the SCE and

---

54 *Vote Solar Motion* at 2.
55 *Id.* at 3.
56 *Id.*

PG&E WDATs.[57] Subsection F.3.d contains detailed provisions that address: 1) an initial scoping meeting, 2) timing of interconnection system impact study results, 3) an interconnection system impact study results meeting, 4) initial posting of interconnection financial security, 5) the ability to make modifications to an interconnection request during the study process and the impact of such modifications on an applicant's interconnection queue position, 6) the scope and purpose of the interconnection facility study and study deposit, 7) waiver of the interconnection facilities study, 8) timing of the interconnection facilities study, 9) the interconnection facility study results meeting, and 10) the second and third postings of interconnection financial security. Incorporating these provisions from the IOU WDATs will help maintain consistency in Commission-approved and FERC-approved interconnection detailed study processes.

Subsection F.3.e (Generator Interconnection Agreement) establishes a process for the tender and negotiation of a generator interconnection agreement upon completion of Detailed Study. Subsection F.3.e also addresses extensions of commercial operation dates identified during the interconnection process.

Subsection F.3.f (Engineering & Procurement Agreement) establishes an optional process that allows a distribution company and an applicant to enter into an engineering and procurement agreement that authorizes the distribution provider to begin engineering and procurement of long lead-time items necessary for the establishment of an interconnection. This allows the process of interconnecting a generating facility to be accelerated by providing additional certainty with regard to an applicant's cost responsibility for long lead-time items procured by the distribution provider on behalf of the applicant.

---

[57] *See, e.g.,* Southern California Edison Wholesale Distribution Access Tariff, Attachment I, § 5.

APPENDIX A

SUBSECTION F.4: Interconnection Financial Security

Subsection F.4 establishes the financial security posting requirements of an applicant. Financial security guarantees reimbursement of a distribution provider's costs associated with an interconnection. Subsection F.4.a (Types of Interconnection Financial Security) identifies the types of interconnection financial security instruments that may be posted by an interconnection applicant. Subsection F.4.b (Initial Posting of Interconnection Financial Security) sets forth the timeframe for the initial posting of financial security. Subsections F.4.c (Second Posting of Interconnection Financial Security) and F.4.d (Third Posting of Interconnection Financial Security) set forth the timeframes for the second and third postings of financial security. Dividing financial security into three postings in this manner provides an applicant flexibility to post security to cover costs incurred by a distribution provider as those costs become more certain and begin to be incurred by a distribution provider. These provisions reduce carrying costs to an applicant while providing assurance to a distribution company that financial resources will be available to cover costs that are incurred to interconnect a generating facility. Subsection F.4.e (General Effect of Withdrawal…) addresses the impact that withdrawal of an interconnection request, or the termination of a generator interconnection agreement, has on interconnection financial security. The financial security provisions in Subsection F.4 were imported from utilities' WDATs.[58]

SUBSECTION F.5: Commissioning, Testing and Parallel Operation

Subsection F.5 establishes requirements for the testing of a generating facility and the authorization of a generating facility's parallel operation with a distribution provider's distribution or transmission system. Subsection F.5.a (Commissioning Testing) sets forth the

[58] *See, e.g., id.*, Attachment I, § 4.8.

requirements for testing a new generating facility and its associated interconnection facilities. Subsection F.5.b (Parallel Operation or Momentary Parallel Operation) establishes a process for an applicant to gain authorization from a distribution provider to begin parallel operation. The commissioning testing and parallel operation provisions in Subsection F.5 of the Revised Tariff mirror Sections C.2.c and C.2.d of the existing Rule 21 tariff.

SUBSECTION F.6: Withdrawal

Subsection F.5 addresses the circumstances under which an interconnection request may be withdrawn by either an applicant or a distribution provider. The withdrawal provisions in Subsection F.6 were imported from the utilities' WDATs.[59]

SECTION G: ENGINEERING REVIEW DETAILS

Section G contains a number of technical review screens whose application will allow a distribution provider to determine the type and degree of review necessary to process an interconnection request consistent with a distribution provider's responsibility to maintain the safety, reliability and power quality of electric distribution and transmission systems. Section G is divided into Initial Review Screens (Subsection G.1), Supplemental Review Screens (Subsection G.2), and Detailed Study Screens (Subsection G.3).

SUBSECTION G.1: Initial Review Screens

Subsection G.1 includes thirteen Initial Review Screens (Screens A-M). The Initial Review Screens include the eight screens that are presently contained in the existing Rule 21 tariff. These existing screens are included in the Revised Tariff as Screens A, B, C, F, H, I, J, and M. The other five screens are either derived from existing federal interconnection procedures or are being introduced as new screens. Screens E (Single Phase Generator), G (Short Circuit Interrupting Capability) and L (Transmission Dependency/Stability) mirror

[59] *See, e.g., id.*, Attachment I, § 4.8.

technical review screens included in FERC's SGIP.[60] The SGIP language has been augmented in Screen M to focus on the absence or presence of potential interdependencies with the state's transmission system. This screen identifies when an interconnection request may require review by CAISO, or at the least, coordination with the CAISO in processing the interconnection request.

Screens D (Transformer Rating) and K (NEM Projects ≤ 500kW) are new screens. Screen D has been added to allow a distribution provider to assess potential secondary transformer or secondary conductor overloads and determine when it may be necessary to change a transformer or conductor to facilitate the safe and reliable interconnection of a generating facility without diminishing the power quality supplied to nearby retail customers. Screen K has been added to facilitate interconnection of NEM facilities up to 500 kW in capacity, by allowing such facilities to bypass Screen M. The use of nameplate capacity in Screen K expedites the Initial Review analysis and enables a distribution provider to better achieve its statutory timeframes for interconnecting NEM systems.

SUBSECTION G.2: Supplemental Review Screens

Supplemental Review screens are a new addition to the Revised Tariff. Screens N (Penetration Test), O (Power Quality and Voltage Tests) and P (Safety and Reliability Tests) allow a distribution provider to assess projects under Fast Track review despite failure of an Initial Review screen. The introduction of these new screens is intended to provide more transparency and certainty with regard to the analysis conducted in Supplemental Review. At present, supplemental review in the existing Rule 21 tariff is largely an internal business practice at each utility, which can create cost and timing uncertainty for developers.

---

60 FERC Small Generator Interconnection Procedures §§ 2.2.1.5, 2.2.1.8, and 2.2.1.9 (August 26, 2006).

SUBSECTION G.3: Detailed Study Screens

The three Detailed Study processes are intended to apply the most appropriate level of review based on a project's interdependencies. The Detailed Study screens assess the interdependency between a project and the transmission system (Screen Q) and between a project and other distribution-level projects queued before it (Screen R). Projects that pass both screens will proceed through the Independent Study Process. Projects that fail Screen Q will proceed to the Transmission Cluster Study. Projects that fail Screen R will proceed to the Distribution Group Study.

SECTION H: GENERATING FACILITY DESIGN AND OPERATING REQUIREMENTS

Section H of the Revised Tariff contains modifications to defined terms and section references.

SECTION I: THIRD-PARTY INSTALLATIONS, RESERVATION OF UNUSED FACILITIES, AND REFUND OF SALVAGE VALUE

Section I of the Revised Tariff contains modifications to defined terms and section references.

SECTION J: METERING, MONITORING AND TELEMETRY

Section J of the Revised Tariff contains modifications to defined terms and section references.

SECTION K: DISPUTE RESOLUTION PROCESS

Section K introduces significant modifications to the interconnection dispute resolution process with the intent to simplify the process and speed the resolution of disputes. Section K also contains modifications to defined terms and section references.

APPENDIX A

SECTION L: CERTIFICATION AND TESTING CRITERIA

Section L of the Revised Tariff contains modifications to defined terms and section references.

APPENDIX A

SUMMARY OF THE PROPOSED RULE 21 INTERCONNECTION AGREEMENTS

The Settlement Agreement includes an Interconnection Agreement for each IOU that reflects the Revised Tariff's numerous and extensive modifications from the existing tariff to accommodate exporting generating facilities. There is currently no general, publicly available, distribution-level interconnection agreement for exporting generating facilities in which interconnection applicants and distribution providers can preview the requirements, procedures and milestones to which they will be obligated. The intent of the Interconnection Agreements is to provide a standardized form Interconnection Agreement, with appendices that may be tailored to the applicant's individual requirements, and to provide an accessible document that will reduce disputes, and the time consumed in negotiations resolving them, ultimately making interconnection more predictable and timely.

The table of contents, thirteen articles and six attachments in the Interconnection Agreements mirror those in the IOU WDATs' Small Generator Interconnection Agreement (SGIA).[61] The articles and attachments are as follows:

Table of Contents

Article 1. Scope and Limitations of Agreement

Article 2. Inspection, Testing, Authorization, and Right of Access

Article 3. Effective Date, Term, Termination, and Disconnection

Article 4. Cost Responsibility for Interconnection Facilities and Distribution Upgrades

Article 5. Cost Responsibility for Network Upgrades

Article 6. Billing, Payment, Milestones, and Financial Security

[61] *See, e.g.,* Pacific Gas & Electric Company Wholesale Distribution Tariff, Attachment F.

Article 7.	Assignment, Liability, Indemnity, Uncontrollable Force, Consequential Damages, and Default
Article 8.	Insurance
Article 9.	Confidentiality
Article 10.	Disputes
Article 11.	Taxes
Article 12.	Miscellaneous
Article 13.	Notices
Article 14.	Signatures
Attachment 1	Glossary of Terms
Attachment 2	Description and Costs of the Generating Facility, Interconnection Facilities, and Metering Equipment
Attachment 3	One-line Diagram Depicting the Generating Facility, Interconnection Facilities, Metering Equipment, and Upgrades
Attachment 4	Milestones
Attachment 5	Additional Operating Requirements for the Distribution Provider's Distribution System and Affected Systems Needed to Support the Interconnection Customer's Needs
Attachment 6	Distribution Provider's Description of its Upgrades and Cost Responsibility

Changes to the SGIA have been made in each Interconnection Agreement to address differences between the WDAT interconnection procedures and the Revised Tariff. In addition, changes to the capitalized terms and section references throughout the Interconnection Agreements maintain consistency with revisions made in the Revised Tariff.

Another of the three interim issues that parties seek to continue to address while the Commission considers the instant motion is the development of additional interconnection

agreements.[62] Upon approval of the March 1, 2012, Vote Solar Motion, the IOUs will produce and share with parties to the OIR drafts of an Independent Study Process Interconnection Agreement, Transmission Cluster Study Process Interconnection Agreement, System Impact Study Agreement, and Facilities Study Agreement.[63] After soliciting informal feedback from parties, the IOUs will file motions proposing these additional agreements within the OIR.

---

62 *Vote Solar Motion* at 2.
63 *Id.*

APPENDIX A

SUMMARY OF THE PROPOSED RULE 21 INTERCONNECTION REQUEST FORMS

The Settlement Agreement also includes proposed Rule 21 Interconnection Request forms. The forms give the distribution provider the basic upfront data needed to expeditiously process new requests. This data includes:

1. The generator's preferred interconnection process;
2. Whether the generator is a new facility or added capacity;
3. General and contact information about the applicant;
4. Expected output of the facility;
5. Technology type;
6. Key milestone dates;
7. The facility's location;
8. Demonstration of site exclusivity;
9. Drawings, diagrams and schematics of the project; and
10. Specific data regarding each generating facility based on its technology type.

The Interconnection Requests also include notices for generators, including the application fee and applicable deposits, information on how to submit an application, details on the coordination of an interconnection with requested distribution service, coordination of certain applications with annual transmission cluster studies, and applicable deadlines.

Similar to the Interconnection Agreements, the Interconnection Requests are based on those used in the IOUs' WDATs.[64] Changes to the WDAT forms have been made in the Interconnection Requests that conform to the differences between the WDAT interconnection

[64] *See, e.g.,* Pacific Gas & Electric Company Wholesale Distribution Tariff, Attachment I, Attachment 2.

procedures and the Revised Tariff. The ordering of the sections is also different in the WDAT requests from that used in the Rule 21 requests. Changes to the capitalized terms and section references throughout the Interconnection Requests maintain consistency with revisions made in the Revised Tariff.

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's own motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources.	Rulemaking 11-09-011 (Filed September 27, 2011)

SETTLEMENT AGREEMENT BETWEEN PACIFIC GAS AND ELECTRIC COMPANY, SAN DIEGO GAS & ELECTRIC COMPANY, SOUTHERN CALIFORNIA EDISION COMPANY and ALOHA SYSTEMS INCORPORATED, CALIFORNIA FARM BUREAU FEDERATION, CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES, CLEAN COALITION, INTERSTATE RENEWABLE ENERGY COUNCIL, SIERRA CLUB, SOLAR ENERGY INDUSTRIES ASSOCIATION, SUNEDISON, SUNLIGHT PARTNERS, SUSTAINABLE CONSERVATION, THE VOTE SOLAR INITIATIVE IN THE ORDER INSTITUTING RULEMAKING ON THE COMMISSION'S OWN MOTION TO IMPROVE DISTRIBUTION LEVEL INTERCONNECTION RULES AND REGULATIONS FOR CERTAIN CLASSES OF ELECTRIC GENERATORS AND ELECTRIC STORAGE RESOURCES (RULEMAKING 11-09-011)

In accordance with Article 12 of the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission"), Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company (jointly, "the IOUs") and Aloha Systems Incorporated, California Farm Bureau Federation, Center For Energy Efficiency And Renewable Technologies, Clean Coalition, Interstate Renewable Energy Council, Sierra Club, Solar Energy Industries Association, SunEdison, Sunlight Partners, Sustainable Conservation, The Vote Solar Initiative (jointly, "the Settling Parties"), by and through their undersigned representatives, enter into this Settlement Agreement resolving the matters described herein. As proposed by the IOUs and the Settling Parties, these matters will constitute the first phase of Rulemaking 11-09-011, entitled *Order Instituting Rulemaking on the Commission's own motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources* ("OIR"). As a compromise to resolve the issues in the proposed first phase of the OIR, the IOUs and the Settling Parties agree to support all of the

terms of this Settlement Agreement and agree that some issues, as discussed herein, should be considered in a subsequent phase of this proceeding.

I. RECITALS

A. ***Whereas***, the IOUs are investor-owned public utilities and subject to the jurisdiction of the Commission with respect to providing electric service to retail customers;

B. ***Whereas***, the Settling Parties intervened in the OIR, participated since August 23, 2011 in the settlement of distribution level interconnection issues ("Settlement"), and variously have an interest in timely, efficient and fair distribution level interconnection policies throughout California;

C. ***Whereas***, the Settlement has been conducted in parallel, and in addition to, the OIR;

D. ***Whereas***, the IOUs and the Settling Parties have worked diligently and intensively through the Settlement process to discuss and resolve differences;

E. ***Whereas***, the IOUs' and the Settling Parties' efforts have resulted in significant revisions to Electric Rule 21, which is the interconnection tariff applicable to certain interconnections under the Commission's jurisdiction, as well modifications to the associated interconnection applications and interconnection agreements (together, "Revised Rule 21 Tariff and Standardized Forms");

F. ***Whereas***, the IOUs and the Settling Parties support an OIR outcome that employs best practices and embodies a rational balance between maintaining distribution and transmission grid ("Grid") safety and reliability while implementing timely, efficient and fair distribution level interconnection procedures;

G. ***Whereas***, the IOUs and the Settling Parties seek to avoid resource-consuming litigation;

***Now Therefore*,** in consideration of the promises and covenants set forth below, the IOUs and the Settling Parties agree to, and shall, as appropriate, duly advocate for, the terms and conditions set forth in Section II, *below*.

II. TERMS AND CONDITIONS

A. ***Revised Rule 21 Tariff and Standardized Forms**:* The Commission should expeditiously adopt the Revised Rule 21 Tariff and Standardized Forms set forth at Attachment A of this Settlement Agreement, and said Revised Rule 21 Tariff and Standardized Forms should be implemented by the IOUs immediately after the Commission approves them. The IOUs' and the Settling Parties' support for adoption of the Revised Rule 21 Tariff and Standardized Forms is subject to the Commission's adoption of the recommendations set forth in this Section II.

B. ***Phasing of OIR***: The Commission's adoption of the Revised Rule 21 Tariff and Standardized Forms should constitute "Phase 1" of the OIR. Upon the Commission issuing a decision adopting and implementing the Revised Rule 21 Tariff and Standardized Forms, Phase 1 should be deemed completed and "Phase 2" of the OIR, as described *below*, should commence no later than at this juncture.

C. ***Phase 2***: The Commission should commence Phase 2 no later than immediately following adoption of the Revised Rule 21 Tariff and Standardized Forms, and conclude Phase 2 as expeditiously as possible and ideally, within nine months of commencement. Phase 2 should be conducted in an open, public Commission rulemaking setting, and the Phase 1 confidential Settlement should be terminated.

D. ***Scope of Phase 2**:* The Commission should issue a Phase 2 Scoping Memo adopting the scope set forth at Attachment B of this Settlement Agreement.

E. ***Phase 1 and Phase 2 Interdependencies**:* The IOUs' and the Settling Parties' support for adoption of the Revised Rule 21 Tariff and Standardized Forms is contingent upon the Commission's adoption of the recommendations set forth herein. In the event the Commission does not proceed with the procedural steps outlined in this Section II, the IOUs and the Settling Parties shall be released from any and all obligations under this Agreement. Said release shall include, but is not limited to, the exercise of the right to seek modification or reopening of any Phase 1 Commission decision(s) by means of a Petition for Modification or any other procedural mechanism. Any and all rights and release of obligations under this Section II.E are additive to the rights and release of obligations in Section III.N, *below*.

F. ***Coordination with the Federal Energy Regulatory Commission:*** Following Commission approval of this Settlement Agreement, the IOUs shall seek Federal Energy

Regulatory Commission ("FERC") approval of any necessary changes to their respective FERC-approved wholesale distribution access tariffs to accommodate Revised Rule 21 Tariff applicants that are studied in the transmission cluster study process and choose a Commission jurisdictional interconnection agreement. The Settling Parties shall support or not file any pleadings or administrative challenges objecting to the IOUs' FERC filings.

G. ***Reporting and Accountability:***

1. Commission Staff has committed to working with the IOUs and the Settling Parties to develop IOU reporting requirements based on the Revised Rule 21 Tariff. Commission Staff has committed to submitting a reporting requirements proposal in the OIR ("Reporting Proposal").

2. The Reporting Proposal shall include, at a minimum, reporting of the engineering and review data as set forth in Attachment C.

3. The Reporting Proposal shall require that reports are filed by the IOUs on a quarterly basis (starting with the end of the first full regular quarter after the Revised Rule 21 Tariff is adopted), that the reports are fully public, and that the IOUs shall produce the reports using a common Excel template.

4. The IOUs shall designate a "Rule 21 Interconnection Ombudsman" with the authority to resolve missed deadline disputes on an informal basis. The Ombudsman shall not be a member of the IOU's distribution system interconnection division. The IOUs shall make the identity, role, and contact information of the ombudsman available on their individual websites.

5. The Commission should direct the Consumer Affairs Branch to be specifically trained to handle disputes regarding missed timelines as set out in the Revised Rule 21 Tariff.

6. The Commission should direct that the Administrative Law Judge Division's Alternative Dispute Resolution program ("ADR") commence hearing a Revised Rule 21 Tariff timeline dispute within ten (10) business days of a request for ADR.

7. Commission Staff has committed to monitoring and reporting on the utilization and effectiveness of the dispute processes set out in Sections II.G.5-6, *above*.

H. ***Cost Certainty:*** The IOUs and the Settling Parties agree that the Commission should take into consideration in Phase 2 that resolving the issue of cost certainty is a high priority and that the key issues are: (1) the variability of potential costs, and (2) the potentially lengthy time frame before final costs are known, including the fact that the Revised Rule 21 Tariff allows the

developer to execute an interconnection agreement and get interconnected before receiving a final cost estimate.

I. ***Ongoing Updates:*** Nothing in this Settlement Agreement should be construed to prohibit the IOUs from making updates to their Revised Rule 21 Tariffs and Standardized Forms in the normal course of business and pursuant to Commission rules, regulations and decisions.

III. GENERAL PROTECTIONS

A. ***Entire Agreement***

This Settlement Agreement embodies the entire understanding and agreement of the IOUs and the Settling Parties with respect to the matters described herein, and it supersedes all prior and contemporaneous oral or written agreements, negotiations, statements, representations, or understandings among the IOUs and the Settling Parties with respect to those matters. This Settlement Agreement constitutes a confidential settlement offer under Rule 12.6 of the Commission's Rules of Practice and Procedure, California Evidence Code section 1152, and Federal Rule of Evidence 408, and therefore may not be used as evidence in any proceedings of any kind, except in an action alleging a breach of this Settlement Agreement.

B. ***No Precedential Value***

This Settlement Agreement represents the agreement between the IOUs and the Settling Parties resolving certain actual and legal issues as specified herein. Pursuant to Rule 12.5 of the Commission's Rules of Practice and Procedure, unless the Commission expressly provides otherwise, this Settlement Agreement does not constitute precedent regarding any principle or issue in this proceeding or in any future proceeding. By entering into this Settlement Agreement, neither party waives any right to assert in any other proceeding any defense under any applicable law, including whether any such law or regulation is, in fact, applicable to the transactions, activities, or entities identified in this Settlement Agreement. Except as provided for herein, each IOU and each Settling Party expressly reserves its right to advocate in other proceedings positions, principles, assumptions, defenses, arguments, and methodologies which may be different than those underlying this Settlement Agreement.

C. ***Reasonableness***

The IOUs and the Settling Parties consider this Settlement Agreement to be reasonable, consistent with law, and in the public interest.

D. ***Construction***

The IOUs and the Settling Parties have cooperated in the preparation of this Settlement Agreement and have had a full opportunity to negotiate its terms and conditions. Accordingly, The IOUs and the Settling Parties expressly waive any common law or statutory rule of construction that ambiguities should be construed against the drafter of this Settlement Agreement. The IOUs and the Settling Parties agree, covenant, and represent that the language in all parts of this Agreement shall be in all cases construed as a whole, according to its fair meaning.

E. ***Modification and Amendment***

This Settlement Agreement may be amended, changed, or modified only upon written agreement executed by the IOUs and the Settling Parties. No waiver of any provision of this Settlement Agreement will be valid unless in writing and signed by the IOU or the Settling Party against whom such waiver is charged.

F. ***Integration***

The IOUs and the Settling Parties intend that this Settlement Agreement shall be interpreted and treated as a unified, integrated agreement.

G. ***Interaction with other Proceedings***

If the Commission requires specific action in other proceedings regarding any provisions covered by this Settlement Agreement, the IOUs and the Settling Parties acknowledge and agree that other efforts to meet the general commitments set forth in this Settlement Agreement may be delayed or modified in order to comply with the Commission's specific requirements in other proceedings.

H. ***Effect of Subject Heading***

Subject headings are included for reference only and are not intended to affect the meaning of the contents or the scope of this Settlement Agreement.

I. ***Choice of Law***

This Settlement Agreement shall be governed by and construed in accordance with California law, notwithstanding otherwise applicable conflict of law principles. Each provision of this Settlement Agreement shall be interpreted in such a manner as to be valid and enforceable under California law.

J. ***Severability***

The terms and provisions of this Settlement Agreement are severable and should any term or provision hereof be declared or determined to be void, voidable, or unenforceable under any applicable law, such void, voidable, or unenforceable term or provision shall not affect or invalidate any other term or provision of this Settlement Agreement, which shall continue to govern the relative rights and duties of the IOUs and the Settling Parties as though the void, voidable, or unenforceable term or provision were not a part of this Settlement Agreement. In addition, it is the intention and agreement of the IOUs and the Settling Parties that all terms and conditions hereof be enforced to the fullest extent permitted by the law.

K. ***Counterparts***

This Settlement Agreement may be executed in counterparts, each of which will be deemed to be an original and all of which, taken together, shall constitute a single instrument. This Settlement Agreement may be executed by signature via facsimile or PDF transmission and either shall be deemed the same as an original signature.

L. ***Force Majeure***

Force majeure events that materially affect the IOUs' ability to implement this Settlement Agreement as planned, such as: (i) acts of nature (*e.g.*, landslides, earthquakes, storms, hurricanes, floods); (ii) riots, terrorism, war, civil disturbances or sabotage; or (iii) changes in law, shall excuse the IOUs' obligations under this Settlement Agreement and/or the IOUs' delayed or modified performance of obligations under this Settlement Agreement.

M. ***Jurisdiction to Enforce***

The IOUs and the Settling Parties agree that the Commission retains jurisdiction to enforce the terms of this Settlement Agreement and resolve any disputes regarding performance under this Settlement Agreement.

N. ***Termination of Settlement Agreement***

If the Commission fails to approve this Settlement Agreement as reasonable and adopt it unconditionally without modification, the IOUs and the Settling Parties will renegotiate this Settlement Agreement in good faith with regard to any Commission-ordered changes in order to preserve the balance of benefits and burdens. In the event such negotiations are unsuccessful, any IOU or Settling Party, in its sole discretion, may rescind its support of this Settlement Agreement. If this Settlement Agreement is terminated, the signatories shall be released from any and all obligations and representations set forth in this Settlement Agreement and shall be

restored to their positions prior to having entered into this Settlement Agreement. Any modification of, or amendment to, this Settlement Agreement shall give each IOU and each Settling Party the right to rescind its support of this Settlement Agreement.

IV. REGULATORY APPROVAL

The IOUs and the Settling Parties agree to use their best efforts to obtain Commission approval of this Settlement Agreement. To that end, the IOUs and the Settling Parties agree to jointly request that the Commission: (1) approve this Settlement Agreement without change; and (2) find that this Settlement Agreement is reasonable in light of the whole record, is consistent with law, and is in the public interest.

V. NOTICES

The IOUs and the Settling Parties shall transmit noticeable information to all other IOUs and Settling Parties via electronic mail.

VI. PERFORMANCE

The IOUs and the Settling Parties agree to perform diligently and in good faith all actions required hereunder, including, but not limited to, the execution of any other documents and the taking of any actions reasonably required to effectuate the terms of this Settlement Agreement, as well as the preparation of exhibits for, and presentation of witnesses at, any hearings required to obtain the Commission's approval and adoption of this Settlement Agreement. Except as indicated in Sections II.E and III.N, *above,* the IOUs and the Settling Parties will not contest in the OIR or in any other forum, or in any matter before the Commission, the recommendations contained in the Settlement Agreement. The IOUs and the Settling Parties will use best efforts to ensure that this Settlement Agreement is approved by the Commission as soon as possible, including jointly asking the Commission to approve and adopt this Settlement Agreement separate from and prior to the Commission's final resolution of the OIR.

The IOUs and the Settling Parties represent that they have read this Settlement Agreement and fully understand all of its terms; that they have executed this Settlement Agreement without coercion or duress of any kind; and that they understand any rights they may have and sign this Agreement with full knowledge of any such rights. The IOUs and the Settling Parties further represent that they have had the opportunity to thoroughly discuss all aspects of this Settlement Agreement with their respective legal counsel.

IN WITNESS WHEREOF, The IOUs and the Settling Parties have executed this Settlement Agreement on the dates stated below:

Dated: March 16, 2012.

By: _____

Geisha Williams
Executive Vice President, Electric Operations
Pacific Gas and Electric Company
77 Beale Street, San Francisco,
Telephone: (415) 973-4141
Facsimile: (415) 973-5056
GJWD@pge.com

IN WITNESS WHEREOF, The IOUs and the Settling Parties have executed this Settlement Agreement on the dates stated below:

Dated: March 15, 2012.

By: _____

Name: Frank J. Cooley
Title: Assistant General Counsel
Name of Organization: Southern California Edison Company
Address: 2244 Walnut Grove Avenue, Rosemead, CA 91770
Telephone: 626-302-3115
Facsimile: 626-302-6693
Email: frank.cooley@sce.com

IN WITNESS WHEREOF, The IOUs and the Settling Parties have executed this Settlement Agreement on the dates stated below:

Dated: March 13, 2012.

By:_____

David L. Geier
Vice President, Electric Operations
San Diego Gas & Electric
8330 Century Park, Ct.
San Diego, CA 92123
Telephone: 858-650-6131
Facsimile: 858-650-6106
DGeier@semprautilities.com

IN WITNESS WHEREOF, The IOUs and the Settling Parties have executed this Settlement Agreement on the dates stated below:

Dated: March 13, 2012.

By: Mark S Shirilau

Dr. Mark S. Shirilau, PE
President and CEO
Aloha Systems Incorporated
8539 Barnwood Lane
Riverside, CA 92508-7126
Telephone: (951) 780-9903
Facsimile: (951) 779-0783
MarkS@alohasys.com

IN WITNESS WHEREOF, The IOUs and the Settling Parties have executed this Settlement Agreement on the dates stated below:

Dated: March 15, 2012.

By: /s/ _____

Sara Steck Myers
Attorney for the
Center for Energy Efficiency and Renewable Technologies
122-28th Avenue
San Francisco, CA 94121
Telephone: (415) 387-1904
Facsimile: (415) 387-4708
Email: ssmyers@att.net

IN WITNESS WHEREOF, The IOUs and the Settling Parties have executed this Settlement Agreement on the dates stated below:

Dated: March 15, 2012.

By: Karen Norene Mills

Karen Norene Mills
Associate Counsel
California Farm Bureau Federation
2300 River Plaza Drive
Sacramento, CA 95833
916-561-5655
916-561-5691
kmills@cfbf.com

IN WITNESS WHEREOF, The IOUs and the Settling Parties have executed this Settlement Agreement on the dates stated below:

Dated: March 15, 2012.

By:

Name: Kenneth Sahm White
Title: Director, Economic & Policy Analysis
Name of Organization: Clean Coalition
Address: 16 Palm Ct
Menlo Park, CA 94025
Telephone: (805) 705-1352
Facsimile: (805) 705-1352
email: sahm@clean-coalition.org

IN WITNESS WHEREOF, The IOUs and the Settling Parties have executed this Settlement Agreement on the dates stated below:

Dated: March 14, 2012.

By: _____

Kevin T. Fox
Partner, Keyes & Fox LLP
For the Interstate Renewable Energy Council
1305 14th Street; #1305
Oakland, CA 9412
Telephone: (510) 314-8201
Email: kfox@keyesandfox.com

IN WITNESS WHEREOF, The IOUs and the Settling Parties have executed this Settlement Agreement on the dates stated below:

Dated: March 15, 2012.

By:_ Matthew Vespa __

Matthew Vespa
Staff Attorney
Sierra Club
85 Second Street, 2nd Floor
San Francisco, CA 94105
Telephone: (415) 977-5753
Fax: (415) 977-5793
matt.vespa@sierraclub.org

IN WITNESS WHEREOF, The IOUs and the Settling Parties have executed this Settlement Agreement on the dates stated below:

Dated: March _15___, 2012.

By:_

Name: Sara Birmingham
Title: Director of Western Policy
Name of Organization: Solar Energy Industries Association
Address: 575 7th St, NW, #400, Washington DC, 20004
Telephone: 415:385-7240
Facsimile:
Email: sbirmingham@seia.org

IN WITNESS WHEREOF, The IOUs and the Settling Parties have executed this Settlement Agreement on the dates stated below:

Dated: March 14, 2012.

By: _____

Name Curtis Seymour
Title Sr. Manager, Government Affairs
Name of Organization SunEdison
Address 600 Clipper Drive, Belmont, CA 94002
Telephone: 443.542.8443
Facsimile:
email cseymour@sunedison.com

IN WITNESS WHEREOF, The IOUs and the Settling Parties have executed this Settlement Agreement on the dates stated below:

Dated: March 15, 2012.

By: _____

Name: Adam Pishl
Title: VP Operations
Name of Organization: Sunlight Partners
Address: 4215 E. McDowell Rd., Suite 212
Telephone: 480-331-4071
Facsimile: na
Email: adam@sunlightpartners.com

IN WITNESS WHEREOF, The IOUs and the Settling Parties have executed this Settlement Agreement on the dates stated below:

Dated: March 15, 2012

By: _____

Name: J Stacey Sullivan
Title: Policy Director
Name of Organization: Sustainable Conservation
Address: 98 Battery Street, Suite 302, San Francisco, CA 94111
Telephone: 415-977-0380
Facsimile: 415-977-0381
Email: ssullivan@suscon.org

IN WITNESS WHEREOF, The IOUs and the Settling Parties have executed this Settlement Agreement on the dates stated below:

Dated: March 14th 2012.

By: Kelly M Foley

Kelly M. Foley
Attorney
The Vote Solar Initiative
2089 Tracy Court
Folsom, CA 95630
Phone: 916-367-2017
Facsimile: 520-463-7025
Email: kelly@votesolar.org

ATTACHMENT A

1. Revised Rule 21 Tariff
2. PG&E Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process
3. PG&E Rule 21 Exporting Generating Facility Interconnection Request
4. SCE Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process
5. SCE Rule 21 Exporting Generating Facility Interconnection Request
6. SDG&E Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process
7. SDG&E Rule 21 Exporting Generating Facility Interconnection Request

A. Table of Contents

B. Applicability 8
1. Applicability 8
2. Definitions 8
3. Applicable Codes and Standards 8
C. Definitions 8
D. General, Rules, Rights and Obligations 19
1. Authorization Required to Operate 19
2. Separate Agreements Required for Other Services 20
3. Services Under This Tariff Limited To Interconnection 20
4. Compliance with Laws, Rules, and Tariffs 20
5. Design Reviews and Inspections 20
6. Right to Access 20
7. Confidentiality 20
a. Scope 20
b. Limitations on Scope 21
c. Disclosure to Commission, FERC, or their respective Staff 21
d. Required Disclosure 22
8. Prudent Operation and Maintenance Required 22
9. Curtailment and Disconnection 22
10. Local Furnishing Bonds 22
11. Coordination with Affected Systems 23
12. Transferability of Interconnection Request 23
13. Special Provisions Applicable to Net Energy Metered Applicants 23
14. Compliance with Established Timelines 24
15. Modification of Timelines 24

E. Interconnection Request Submission Process 24
1. Pre-Application Report 24
2. Interconnection Request Process 26
a. Applicant Initiates Contact with Distribution Provider 26
b. Applicant Selects a Study Process 26
c. Applicant Completes an Interconnection Request 27
d. Site Exclusivity 28
3. Interconnection Request Fee and Study Deposit 28
a. Detailed Study Deposit 28
4. Interconnection Cost Responsibility 30
a. Costs of Interconnection and Parallel Operation 30
b. Methodology and Timing of Cost Identification 30
c. Timing of Cost Identification 30
d. Producer Costs During Parallel Operation 31
e. Cost Allocation 31
f. Summary Tables 32
5. Interconnection Request Validation and Assignment of Queue Position 33
a. Acknowledgement of Interconnection Request 33
b. Deficiencies in Interconnection Request 33
c. Assignment of Queue Position 34
d. Publication of the Interconnection Queue 34
F. Review Process For Interconnection Requests 36
1. Overview of the Interconnection Review Process 36
a. Valid Interconnection Request 36
b. Fast Track Review 36
c. Detailed Studies 37
d. Compliance with Timelines 37

2. Fast Track Interconnection Review Process 38
a. Initial Review 38
b. Optional Initial Review Results Meeting 39
c. Supplemental Review 39
d. Optional Supplemental Review Results Meeting 40
e. Execution of the Generator Interconnection Agreement 41
3. Detailed Study Interconnection Review Process 42
a. Detailed Study Track Selection Process 42
b. Distribution Group Study Process 43
c. Transmission Cluster Study Process 44
d. Independent Study Process 45
e. Generator Interconnection Agreement 50
f. Engineering & Procurement (E&P) Agreement 51
4. Interconnection Financial Security 51
a. Types of Interconnection Financial Security. 51
b. Initial Posting of Interconnection Financial Security 52
c. Second Posting of Interconnection Financial Security 53
d. Third Posting of Interconnection Financial Security. 54
e. General Effect of Withdrawal of Interconnection Request or Termination of the Generator Interconnection Agreement on Interconnection Financial Security. 55
5. Commissioning Testing and Parallel Operation 58
a. Commissioning Testing 58
b. Parallel Operation or Momentary Parallel Operation 58
6. Withdrawal 59
G. Engineering Review Details 59
1. Initial Review Screens 62
a. Screen A: Is the PCC on a Networked Secondary System? 62

b. Screen B: Is Certified Equipment used?....62

c. Screen C: Is the Starting Voltage Drop within acceptable limits? 63

d. Screen D: Is the transformer or secondary conductor rating exceeded? 63

e. Screen E: Does the Single-Phase Generator cause unacceptable imbalance?....64

f. Screen F: Is the Short Circuit Current Contribution Ratio within acceptable limits? 64

g. Screen G: Is the Short Circuit Interrupting Capability Exceeded?....64

h. Screen H: Is the line configuration compatible with the Interconnection type?....65

i. Screen I: Will power be exported across the PCC?....66

j. Screen J: Is the Gross Rating of the Generating Facility 11 kVA or less? 67

k. Screen K: Is the Generating Facility a Net Energy Metering (NEM) Generating Facility with nameplate capacity less than or equal to 500kW? 68

l. Screen L: Transmission Dependency and Transmission Stability Test....68

m. Screen M: Is the aggregate Generating Facility capacity on the Line Section less than 15% of Line Section peak load for all line sections bounded by automatic sectionalizing devices? 68

2. Supplemental Review Screens....69

a. Screen N: Penetration Test....69

b. Screen O: Power Quality and Voltage Tests 70

c. Screen P: Safety and Reliability Tests 70

3. Detailed Study Screens 72

a. Screen Q: Is the Interconnection Request electrically Independent of the Transmission System?....72

b. Screen R: Is the Interconnection Request independent of other earlier-queued and yet to be studied interconnection requests interconnecting to the Distribution System?....73

c. Independent Study Process Interconnection Studies 73

H. Generating Facility Design and Operating Requirements 74

1. General Interconnection and Protective Function Requirements 74

a. Protective Functions Required 75

b. Momentary Paralleling Generating Facilities 75

c. Suitable Equipment Required 75
d. Visible Disconnect Required 76
e. Drawings Required 76
f. Generating Facility Conditions Not Identified....77
2. Prevention of Interference 77
a. Voltage Regulation....77
b. Voltage Trip Setting 77
c. Paralleling....78
d. Flicker....79
e. Integration with Distribution Provider's Distribution System Grounding 79
f. Frequency....79
g. Harmonics 80
h. Direct Current Injection 81
i. Power Factor 81
3. Technology Specific Requirements 81
a. Technology Specific Requirements....81
b. Induction Generators 82
c. Inverters....82
4. Supplemental Generating Facility Requirements 82
a. Fault Detection....82
b. Transfer Trip 82
c. Reclose Blocking 82
I. Third-Party Installations, Reservation of Unused Facilities, and Refund of Salvage Value .83
1. Interconnection Facilities and Distribution Upgrades 83
2. Third-Party Installations....83
3. Reservation of Unused Facilities 83
4. Refund of Salvage Value....83

J. Metering, Monitoring and Telemetering 83
1. General Requirements 83
2. Metering by Non-Distribution Provider Parties 84
3. Net Generation Output Metering 84
4. Point of Common Coupling (PCC) Metering 85
5. Telemetering 85
6. Location 85
7. Costs of Metering 86
8. Multiple Tariff Metering 86
K. Dispute Resolution Process 86
1. Scope 86
2. Procedures 86
3. Performance During Dispute 87
L. Certification and Testing Criteria 87
1. Introduction 87
2. Certified and Non-Certified Interconnection Equipment 88
a. Certified Equipment 88
b. Non-Certified Equipment 89
3. Type Testing 89
a. Type Tests and Criteria for Interconnection Equipment Certification 90
b. Anti-Islanding Test 91
c. Non-Export Test 91
d. In-rush Current Test 91
e. Surge Withstand Capability Test 91
f. Synchronization Test 92
4. Production Testing 92
5. Commissioning Testing 93

a. Commissioning Testing 93
b. Review, Study, and Additional Commissioning Test Verification Costs 94
c. Other Checks and Tests 94
d. Certified Equipment 94
e. Non-Certified Equipment 95
f. Verification of Settings 95
g. Trip Tests 95
h. In-service Tests 95
6. Periodic Testing 95
7. Type Testing Procedures Not Defined in Other Standards 96
a. Non-Exporting Test Procedures 96
b. In-rush Current Test Procedures 101
M. Appendix One 102

B. Applicability

1. Applicability

This Rule describes the Interconnection, operating and Metering requirements for those Generating Facilities to be connected to Distribution Provider's Distribution System and Transmission System over which the California Public Utilities Commission (Commission) has jurisdiction. All Generating Facilities seeking Interconnection with Distribution Provider's Transmission System shall apply to the California Independent System Operator (CAISO) for Interconnection and be subject to CAISO Tariff except for 1) Net Energy Metering Generating Facilities and 2) Generating Facilities that do not export to the grid or sell any exports sent to the grid (Non-Export Generating Facilities). NEM Generating Facilities and Non-Export Generating Facilities subject to Commission jurisdiction shall interconnect under this Rule regardless of whether they interconnect to Distribution Provider's Distribution or Transmission System. Subject to the requirements of this Rule, Distribution Provider will allow the Interconnection of Generating Facilities with its Distribution or Transmission System.

Generating Facility interconnections to Distribution Provider's Distribution System that are subject to Federal Energy Regulatory Commission (FERC) jurisdiction shall apply under Distribution Provider's WDAT.

2. Definitions

Capitalized terms used in this Rule, and not defined in Distribution Provider's other tariffs shall have the meaning ascribed to such terms in Section C of this Rule. The definitions set forth in Section C of this Rule shall only apply to this Rule, the Interconnection Request, study agreements and Generator Interconnection Agreements, and may not apply to Distribution Provider's other tariffs.

3. Applicable Codes and Standards

This Rule has been harmonized with the requirements of American National Standards Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) 1547-2003 Standards for Interconnecting Distributed Resources with Electric Power Systems. In some sections, IEEE 1547 language has been adopted directly, in others, IEEE 1547 requirements were interpreted and this Rule's language was changed to maintain the spirit of both documents.

The language from IEEE 1547 that has been adopted directly (as opposed to paraphrased language or previous language that was determined to be consistent with IEEE 1547) is followed by a citation that lists the Clause from which the language derived. For example, IEEE 1547-4.1.1 is a reference to Clause 4.1.1.

In the event of any conflict between this Rule, any of the standards listed herein, or any other applicable standards or codes, the requirements of this Rule shall take precedence.

C. Definitions

The definitions in this Section C are applicable only to this Rule, the Interconnection Request, Study Agreements and Generator Interconnection Agreements.

Added Facilities: For SCE As Defined in Distribution Provider's Rule 2, For PG&E and SDG&E See Special Facilities.

Affected System: An electric system other than Distribution Provider's Distribution or Transmission System that may be affected by the proposed Interconnection.

Affected System Operator: The entity that operates an Affected System.

Affiliate: With respect to a corporation, partnership or other entity, each such other corporation, partnership or other entity that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, such corporation, partnership or other entity.

Allocated Capacity: Existing aggregate generation capacity in megawatts (MW) interconnected to a substation/area bus, bank or circuit (i.e., amount of generation online).

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 Interconnection Request pursuant to this Rule.

Application: See Interconnection Request.

Available Capacity: Total Capacity less the sum of Allocated Capacity and Queued Capacity.

Base Case: Data including, but not limited to, base power flow, short circuit and stability data bases, underlying load, generation, and transmission facility assumptions, contingency lists, including relevant special protection systems, and transmission diagrams used to perform the Interconnection Studies. The Base Case may include Critical Energy Infrastructure Information (as that term is defined by FERC). The Base Case shall include (a) transmission facilities as approved by Distribution Provider or CAISO, as applicable, (b) planned Distribution Upgrades that may have an impact on the Interconnection Request, (c) Distribution Upgrades and Network Upgrades associated with generating facilities in (iv) below, and (d) generating facilities that (i) are directly interconnected to the Distribution System or CAISO Controlled Grid; (ii) are interconnected to Affected Systems and may have an impact on the Interconnection Request; (iii) have a pending request to interconnect to the Distribution System or an Affected System; or (iv) are not interconnected to the Distribution System or CAISO Controlled Grid, but are subject to a fully executed Generator Interconnection Agreement (or its equivalent predecessor agreement) or for which an unexecuted Generator Interconnection Agreement (or its equivalent predecessor agreement) has been requested to be filed with FERC.

Business Day: Monday through Friday, excluding Federal and State Holidays.

CAISO Controlled Grid: The system of transmission lines and associated facilities that have been placed under the CAISO's Operational Control.

CAISO Tariff: The California Independent System Operator FERC Electric Tariff.

Calendar Day: Any day including Saturday, Sunday or a Federal and State Holiday.

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 Nationally Recognized Test Laboratories (NRTLs).

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

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

Commercial Operation: The status of a Generating Facility that has commenced generating electricity, excluding electricity generated during the period which Producer is engaged in on-site test operations and commissioning of the Generating Facility prior to Commercial Operation.

Commercial Operation Date: The date on which a Generator at a Generating Facility commences Commercial Operation as agreed to by the Parties.

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.

Confidential Information: See Section D.7.

Conservation Voltage Regulation (CVR): The CVR program that the Commission directed Distribution Providers to implement as applicable to the operation and design of distribution circuits and related service voltages.

Construction Activities: Actions by Distribution Provider that result in irrevocable financial commitments for the purchase of major electrical equipment or land for Distribution Provider's Interconnection Facilities, Distribution Upgrades, or Network Upgrades assigned to the Interconnection Customer that occur after receipt of all

appropriate governmental approvals needed for Distribution Provider's Interconnection Facilities, Distribution Upgrades, or Network Upgrades.

Control Area: As defined in the CAISO Tariff.

Customer: The entity that receives or is entitled to receive Distribution Service through Distribution Provider's Distribution System or is a retail Customer of Distribution Provider connected to the Transmission 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.

Delivery Network Upgrades: The transmission facilities at or beyond the point where Distribution Provider's Distribution System interconnects to the CAISO Controlled Grid, other than Reliability Network Upgrades, as defined in the CAISO Tariff.

Detailed Study: An Independent Study, a Distribution Group Study or a Transmission Cluster Study.

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.

Dispute Resolution: See Section K.

Distribution Group Study Process: The study process defined in Section F.3.b.

Distribution Provider: Southern California Edison Company [or Pacific Gas and Electric Company or San Diego Gas & Electric Company].

Distribution Service: The service of delivering energy over the Distribution System pursuant to the approved tariffs of Distribution Provider 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 Distribution Provider, other than Interconnection Facilities or the Transmission System, by which Distribution Provider provides Distribution Service to its Customers.

Distribution Upgrades: The additions, modifications, and upgrades to Distribution Provider's Distribution System at or beyond the Point of Interconnection to facilitate interconnection of the Generating Facility and render the Distribution Service. Distribution Upgrades do not include Interconnection Facilities.

Electrical Independence Test: The tests set forth in Section G.3 used to determine eligibility for the Independent Study Process.

Emergency: Whenever in Distribution Provider's discretion an Unsafe Operating Condition or other hazardous condition exists or whenever access is necessary for emergency service restoration, and such immediate action is necessary to protect

persons, Distribution Provider's facilities or property of others from damage or interference caused by Interconnection Customer's Generating Facility, or the failure of protective device to operate properly, or a malfunction of any electrical system equipment or a component part thereof.

Energy-Only Deliverability Status: A condition elected by an Interconnection Customer for a Generating Facility interconnected to Distribution System, the result of which is that the Interconnection Customer is responsible only for the costs of Reliability Network Upgrades and is not responsible for the costs of Delivery Network Upgrades, but the Generating Facility will be deemed to have a Net Qualifying Capacity as defined in the CAISO Tariff of zero.

Engineering and Procurement Agreement: An agreement that authorizes Distribution Provider to begin engineering and procurement of long lead-time items necessary for the establishment of the Interconnection in order to advance the implementation of the Interconnection Request.

Exporting Generating Facility: Any Generating Facility other than a Non-Export Generating Facility, NEM Generating Facility, or uncompensated Generating Facility.

Fast Track Process: The interconnection study process set forth in Section F.2.

Federal Energy Regulatory Commission: Referred to herein as FERC.

Field Testing: Testing performed in the field to determine whether equipment meets Distribution Provider'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, excluding Interconnection Facilities, owned or provided by Producer for the purpose of producing electric power, including storage.

Generating Facility Capacity: The net capacity of the Generating Facility and the aggregate net capacity of the Generating Facility where it includes multiple Generators.

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.

Generator Interconnection Agreement: An agreement between Distribution Provider and Producer providing for the Interconnection of a Generating Facility that gives 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 Generator Interconnection Agreements.

Good Utility Practice: Any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.

Governmental Authority: Any federal, state, local or other governmental regulatory or administrative agency, court, commission, department, board, or other governmental subdivision, legislature, rulemaking board, tribunal, or other governmental authority having jurisdiction over the Parties, their respective facilities, or the respective services they provide, and exercising or entitled to exercise any administrative, executive, police, or taxing authority or power; provided, however, that such term does not include Interconnection Customer, Distribution Provider, or any Affiliate thereof.

Gross Rating; Gross Nameplate Rating; Gross Capacity or 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.

Independent Study Process: The interconnection study process set forth in Section F.3.d.

Independent Study Process Study Agreement: The agreement entered into by the Interconnection Customer and Distribution Provider which sets forth the Parties' agreement to perform Interconnection Studies under the Independent Study Process

Initial Review: See Section F.2.a.

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

In-Service Date: The estimated date upon which Applicant reasonably expects it will be ready to begin use of Distribution Provider's Interconnection Facilities.

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

Interconnection Agreement: See Generator Interconnection Agreement.

Interconnection Customer: See Applicant.

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. Interconnection Facilities may be owned by either Producer or Distribution Provider.

Interconnection Facilities Study: A study conducted by Distribution Provider for an Interconnection Customer under the Independent Study Process to determine a list of facilities (including Distribution Provider's Interconnection Facilities, Distribution Upgrades, and Network Upgrades as identified in the Interconnection System Impact Study), the cost of those facilities, and the time required to interconnect the Generating Facility with Distribution Provider's Distribution or Transmission System. The scope of the study is defined in Section G.3.c.

Interconnection Financial Security: Any of the financial instruments listed in Section F.4.a.

Interconnection Request: An Applicant's request to interconnect a new Generating Facility, or to increase the capacity of, or make a Material Modification to the operating characteristics of, an existing Generating Facility that is interconnected with Distribution Provider's Distribution or Transmission System.

Interconnection Study: A study to establish the requirements for Interconnection of a Generating Facility with Distribution Provider's Distribution System or Transmission System, pursuant to this Rule.

Interconnection System Impact Study: An engineering study conducted by Distribution Provider for an Interconnection Customer under the Independent Study Process that evaluates the impact of the proposed interconnection on the safety and reliability of Distribution Provider's Distribution and/or Transmission System and, if applicable, an Affected System. The scope of the study is defined in Section G.3.c.i.

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

Large Generating Facility: A Generating Facility having a Generating Facility Capacity of more than 20 MW.

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

Local Furnishing Bond: Tax-exempt bonds utilized to finance facilities for the local furnishing of electric energy, as described in Internal Revenue Code, 26 U.S.C. § 142(f).

Local Furnishing Distribution Provider: Any Distribution Provider that owns facilities financed by Local Furnishing Bonds.

Material Modification: Those modifications that have a material impact on cost or timing of any Interconnection Request with a later queue priority date or a change in Point of Interconnection. A Material Modification does not include a change in ownership of a Generating Facility.

Metering: The measurement of electrical power in kilowatts (kW) and/or energy in kilowatt-hours (kWh), and if necessary, reactive power in kVAR at a point, and its display to Distribution Provider, 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 and Transmission 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 (NEM): Metering for the receipt and delivery of electricity between Producer and Distribution Provider pursuant to California Public Utilities Code (PUC) sections 2827, 2827.8, or 2827.10.

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 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.

Net Rating or Net Nameplate Rating: The Gross Rating minus the consumption of electrical power of the auxiliary load. .

Network Upgrades: Delivery Network Upgrades and Reliability Network Upgrades.

Networked Secondary System: An AC distribution system where the secondaries of the distribution transformers are connected to a common bus for supplying electricity directly to consumers. There are two types of secondary networks: grid networks (also referred to as area networks or street networks) and Spot Networks. Synonyms: Secondary Network. Refer to IEEE 1547.6 for additional detail.

Non-Emergency: Conditions or situations that are not Emergencies, including but not limited to meter reading, inspection, testing, routine repairs, replacement, and maintenance.

Non-Export; Non-Exporting: When the Generating Facility is sized and designed such that the Generator output is used for Host Load only and is designed to

prevent the transfer of electrical energy from the Generating Facility to Distribution Provider's Distribution or Transmission System as described in Appendix One.

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 Distribution Provider while Interconnected. For the purpose of this Rule, Parallel Operation includes only those Generating Facilities that are Interconnected with Distribution Provider's Distribution or Transmission System for more than 60 cycles (one second).

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

Party, Parties: Applicant or Distribution Provider

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 Distribution Provider and the electrical conductors of Producer.

Point of Interconnection: The point where the Interconnection Facilities connect with Distribution Provider's Distribution or Transmission System. This may or may not be coincident with the Point of Common Coupling.

Pre-Construction Activities: The actions by Distribution Provider, other than those required by an Engineering and Procurement Agreement under Section F.3.f, undertaken prior to Construction Activities in order to prepare for the construction of Distribution Provider's Interconnection Facilities, Distribution Upgrades, or Network Upgrades assigned to the Interconnection Customer, including, but not limited to, preliminary engineering, permitting activities, environmental analysis, or other activities specifically needed to obtain governmental approvals for Distribution Provider's Interconnection Facilities, Distribution Upgrades, or Network Upgrades.

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

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

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.

Queue Position: See Section E.5.C.

Queued Capacity: Aggregate queued generation capacity (in MW) for a substation/area bus, bank or circuit (i.e., amount of generation in the queue).

Reasonable Efforts: With respect to an action required to be attempted or taken by a Party under this Rule, efforts that are timely and consistent with Good Utility Practice and are otherwise substantially equivalent to those a Party would use to protect its own interests.

Reliability Network Upgrades: The transmission facilities at or beyond the point where Distribution Provider's Distribution System interconnects to the CAISO Controlled Grid, necessary to interconnect one or more Generating Facility(ies) safely and reliably to the CAISO Controlled Grid, as defined in the CAISO Tariff.

Section 218 Load: Electrical power that is supplied in compliance with California PUC section 218. PUC 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 Distribution Provider's Distribution or Transmission System.

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

Single Line Diagram; Single Line Drawing: A schematic drawing, showing the major electric switchgear, Protective Function devices (including relays, current transformer and potential transformer configurations/wiring in addition to circuit breakers/fuses), wires, Generators, transformers, meters and other devices, providing relevant details to communicate to a qualified engineer the essential design and safety of the system being considered.

Small Generating Facility: A Generating Facility that has a Generating Facility Capacity of no more than 20 MW.

Site Exclusivity: Documentation reasonably demonstrating: (1) For private land: (a) Ownership of, a leasehold interest in, or a right to develop property upon which the Generating Facility will be located consisting of a minimum of 50% of the acreage reasonably necessary to accommodate the Generating Facility; or (b) an option to purchase or acquire a leasehold interest in property upon which the Generating Facility will be located consisting of a minimum of 50% of the acreage reasonably necessary to

accommodate the Generating Facility. (2) For public land, including that controlled or managed by any federal, state or local agency, a final, non-appealable permit, license, or other right to use the property for the purpose of generating electric power and in acreage reasonably necessary to accommodate the Generating Facility, which exclusive right to use public land under the management of the federal Bureau of Land Management shall be in a form specified by the Bureau of Land Management. The demonstration of Site Exclusivity, at a minimum, must be through the Commercial Operation Date of the new Generating Facility or increase in capacity of the existing Generating Facility.

Special Facilities: For SCE See Added Facilities. For PG&E and SDG&E as defined in Distribution Provider's Rule 2.

Spot Network: For purposes of this Rule, a Spot Network is a type of distribution system found within modern commercial buildings to provide high reliability of service to a single customer.

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).

Supplemental Review: See Section F.2.c.

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

Telemetering: The electrical or electronic transmittal of Metering data on a real-time basis to Distribution Provider.

Total Capacity: Capacity (in MW) of substation/area bus, bank or circuit based on normal or operating ratings.

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

Transient Stability: The ability of an electrical system to withstand disturbances. Transient Stability studies are performed to ensure power system stability and are time-based simulations that assess the performance of the power system during and shortly following system disturbances.

Transmission Cluster Study Process: The cluster study process as defined in Distribution Provider's Wholesale Distribution Access Tariff [Wholesale Distribution Tariff for PG&E, Wholesale Open Access Distribution Tariff for SDG&E].

Transmission System: Transmission facilities owned by Distribution Provider that have been placed under the CAISO's operational control and are part of the CAISO Controlled Grid, as defined in the CAISO Tariff.

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 Distribution Provider's Distribution System, without the approval of Distribution Provider.

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 Generator Interconnection Agreement.

Wholesale Distribution Access Tariff: SCE's Wholesale Distribution Access Tariff (WDAT), PG&E Wholesale Distribution Tariff (WDT) and SDG&E's Wholesale Open Access Distribution Tariff (WADT).

D. General, Rules, Rights and Obligations

1. Authorization Required to Operate

A Producer must comply with this Rule, execute a Generator Interconnection Agreement with Distribution Provider, and receive Distribution Provider's express written permission before Parallel Operation of its Generating Facility with Distribution Provider's Distribution or Transmission System. Distribution Provider shall apply this Rule in a non-discriminatory manner and shall not unreasonably withhold its permission for Parallel Operation of Producer's Generating Facility with Distribution Provider's Distribution or Transmission System.

2. Separate Agreements Required for Other Services

A Producer requiring other electric services from Distribution Provider including, but not limited to, Distribution Service during periods of curtailment or interruption of Producer's Generating Facility, must enter into agreements with Distribution Provider for such services in accordance with Distribution Provider's Commission-approved tariffs.

3. Services Under This Tariff Limited To Interconnection

Interconnection with Distribution Provider's Distribution or Transmission System under this Rule does not provide a Producer any rights to utilize Distribution Provider's Distribution or Transmission System for the transmission, distribution, or wheeling of electric power, nor does it limit those rights.

4. Compliance with Laws, Rules, and Tariffs

A Producer shall ascertain and comply with applicable Commission-approved tariffs of Distribution Provider; applicable FERC-approved rules, tariffs, and regulations; and any local, state or federal law, statute or regulation which applies to the design, siting, construction, installation, operation, or any other aspect of Producer's Generating Facility and Interconnection Facilities.

5. Design Reviews and Inspections

Distribution Provider shall have the right to review the design of a Producer's Generating and Interconnection Facilities and to inspect a Producer's Generating and/or Interconnection Facilities prior to the commencement of Parallel Operation with Distribution Provider's Distribution or Transmission System. Distribution Provider may require a Producer to make modifications as necessary to comply with the requirements of this Rule. Distribution Provider's review and authorization for Parallel Operation shall not be construed as confirming or endorsing Producer's design or as warranting the Generating Facilities' and/or Interconnection Facilities' safety, durability or reliability. Distribution Provider shall not, by reason of such review or lack of review, be responsible for the strength, adequacy, or capacity of such equipment.

6. Right to Access

A Producer's Generating Facility and/or Interconnection Facilities shall be reasonably accessible to Distribution Provider personnel as necessary for Distribution Provider to perform its duties and exercise its rights under its tariffs approved by the Commission, and under any Generator Interconnection Agreement between Distribution Provider and Producer.

7. Confidentiality

a. Scope

Confidential Information shall include, without limitation, confidential, proprietary or trade secret information relating to the present or planned business of Applicant, Customer, Producer, or Distribution Provider (individually referred to in Section D.7 as Party or collectively as Parties), including all information relating to a Party's technology, research and development, business affairs, and pricing. Distribution Provider shall not use the information contained in the Interconnection Request to propose discounted tariffs to the Customer unless authorized to do so by the Customer or the information is provided to Distribution Provider by the Customer through other means.

Information is Confidential Information only if it is clearly designated or marked in writing as confidential on the face of the document (including electronic materials), or, if the information is conveyed orally or by inspection, if the Party providing the information orally informs the Party receiving the information that the information is confidential. For purposes of this Rule all design, operating specifications, and metering data provided by Applicant shall be deemed Confidential Information regardless of whether it is clearly marked or otherwise designated as such, except as provided in section D.7.b. below.

If requested by either Party, the other Party shall provide in writing, the basis for asserting that the information referred to in this Article warrants confidential treatment, and the requesting Party may disclose such writing to the appropriate Governmental Authority. Each Party shall be responsible for the costs associated with affording confidential treatment to its information.

b. Limitations on Scope

Confidential Information shall not include information pertaining to each Interconnection Request that may be provided in a publicly-posted queue pursuant to Section E.5.d of this Rule.

Confidential Information shall not include information that: (1) is generally available to the public other than as a result of a disclosure by the receiving Party; (2) was in the lawful possession of the receiving Party on a non-confidential basis before receiving it from the disclosing Party; (3) was supplied to the receiving Party without restriction by a third party, who, to the knowledge of the receiving Party after due inquiry, was under no obligation to the disclosing Party to keep such information confidential; (4) was independently developed by the receiving Party without reference to Confidential Information of the disclosing Party; (5) is, or becomes, publicly known, through no wrongful act or omission of the receiving Party; or (6) is required, in accordance with Section D.7.d, Required Disclosure, to be disclosed by any Governmental Authority or is otherwise required to be disclosed by law or subpoena.

Information designated as Confidential Information will no longer be deemed confidential if the Party that designated the information as confidential notifies the other Party that it no longer is confidential.

c. Disclosure to Commission, FERC, or their respective Staff

Notwithstanding anything in this Section D.7 to the contrary, and pursuant to 18 CFR section 1b.20 in the case of disclosure to FERC, if the Commission, FERC, or their respective staff, during the course of an investigation or otherwise, requests information from one of the Parties that is otherwise required to be maintained in confidence pursuant to this Rule, the Party shall provide the requested information to the Commission, FERC, or their respective staff, within the time provided for in the request for information. In providing the information to the Commission, FERC, or their respective staff, the Party shall, pursuant to PUC section 583 and General Order 66-C in the case of disclosure to the Commission, and consistent with 18 CFR section 388.112 in the case of disclosure to FERC, request that the information be treated as confidential and non-public by the Commission, FERC, and their respective staff and that the information be withheld from public disclosure. Requests from another state regulatory body with jurisdiction conducting a confidential investigation shall be treated in a similar manner, consistent with applicable state rules and regulations.

d. Required Disclosure

Subject to the exception in Section D.7.c, any information that a Party claims is Confidential Information shall not be disclosed by the other Party to any person not employed or retained by the other Party, except to the extent disclosure is (i) required by law or pursuant to an order of the Commission or FERC; (ii) reasonably deemed by the disclosing Party to be required to be disclosed in connection with a dispute between or among the Parties, or the defense of litigation or dispute; (iii) otherwise permitted by consent of the other Party, such consent not to be unreasonably withheld; (iv) necessary to fulfill its obligations under this Rule; or (v) as a transmission or distribution service provider or a Control Area operator, including disclosing the Confidential Information to a Regional Transmission Organization or CAISO, or to a subregional, regional or national reliability organization or planning group under the applicable confidentiality provisions in the relevant tariffs. Prior to any disclosures of the other Party's Confidential Information under this subparagraph, or if any third party or Governmental Authority makes any request or demand for any of the information described in this subparagraph, the disclosing Party agrees to assert confidentiality and cooperate with the other Party in seeking to protect the Confidential Information from public disclosure by confidentiality agreement, protective order or other reasonable measures.

8. Prudent Operation and Maintenance Required

A Producer shall operate and maintain its Generating Facility and Interconnection Facilities in accordance with Prudent Electrical Practices and shall maintain compliance with this Rule.

9. Curtailment and Disconnection

Distribution Provider may limit the operation or disconnect or require the disconnection of a Producer's Generating Facility from Distribution Provider's Distribution or Transmission System at any time, with or without notice, in the event of an Emergency, or to correct Unsafe Operating Conditions. Distribution Provider may also limit the operation or disconnect or require the disconnection of a Producer's Generating Facility from Distribution Provider's Distribution or Transmission System upon the provision of reasonable written notice: 1) to allow for routine maintenance, repairs or modifications to Distribution Provider's Distribution or Transmission System; 2) upon Distribution Provider's determination that a Producer's Generating Facility is not in compliance with this Rule; or 3) upon termination of the Generator Interconnection Agreement. Upon Producer's written request, Distribution Provider shall provide a written explanation of the reason for such curtailment or disconnection.

10. Local Furnishing Bonds

If a proposed Interconnection of a Generating Facility would impair the tax-exempt status of interest on the Local Furnishing Bonds or the deductibility of interest expense on the Local Furnishing Bonds to the Local Furnishing Distribution Provider under the Internal Revenue Code, Treasury Regulations and/or applicable IRS rulings, the Interconnection Customer will be required to pay the costs properly attributable to the proposed Interconnection of such Generating Facility. The Interconnection Study shall specify and estimate the cost of all remedial measures that address the financial impacts, if any, on Local Furnishing Bonds that would result from an Interconnection.

11. Coordination with Affected Systems

Distribution Provider will notify the Affected System Operators that are potentially affected by an Applicant's Interconnection Request or group of Interconnection Requests. Distribution Provider will coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems with Affected System Operators and, if possible, include those results (if available) in its applicable Interconnection Study within the time frame specified in this Rule. Distribution Provider will include such Affected System Operators in all meetings held with Applicant as required by this Rule. Applicant will cooperate with Distribution Provider in all matters related to the conduct of studies and the determination of modifications to Affected Systems. A transmission provider which may be an Affected System shall cooperate with Distribution Provider with whom interconnection has been requested in all matters related to the conduct of studies and the determination of modifications to Affected Systems. Applicant shall enter into an agreement with the owner of the Affected System, as applicable. The agreement shall specify the terms governing payments to be made by Applicant to the owner of the Affected System as well as the repayment, if applicable, by the owner of the Affected System.

12. Transferability of Interconnection Request

An Applicant may transfer its Interconnection Request to another entity only if such entity acquires the proposed Generating Facility identified in the Interconnection Request and the Point of Interconnection does not change.

13. Special Provisions Applicable to Net Energy Metered Applicants

Notwithstanding any other provision in this Rule:

1. For Generating Facilities qualifying for service under PUC sections 2827, 2827.8 and 2827.10 Distribution Provider may proceed from Initial to Supplemental Review to Independent Study Process to further study without waiting for Applicant concurrence, since Applicant is not responsible for payment of study costs.

2. For Generating Facilities qualifying for service under PUC sections 2827 and 2827.8 Distribution Provider approval for Interconnection shall normally be processed not later than thirty (30) Business Days following Distribution Provider's receipt of 1) a completed Net Energy Metering Interconnection Request including all supporting documents and required payments; 2) a completed signed Net Energy Metering Generator Interconnection Agreement; and 3) evidence of Applicant's final electric inspection clearance from the Governmental Authority having jurisdiction over the Generating Facility. If the 30-day period cannot be met, Distribution Provider shall notify Applicant and the Commission of the reason for the inability to process the Interconnection Request and the expected completion date. However, Applicants with PUC section 2827 Generating Facilities that include non-inverter based Generators and/or Generators with non-Certified Equipment should plan to submit a completed Net Energy Metering Interconnection Request including all supporting documents sufficient for Distribution Provider to start the review process in Section F.2.a without waiting for

the final inspection clearance. Applicants with such Generating Facilities are advised to submit their Interconnection Request at least six (6) months in advance of their planned Commercial Operation Date. Depending on the size and location of these Generating Facilities, additional time for review may be required and could include Supplemental Review (twenty (20) Business Days), a System Impact Study (sixty (60) Calendar Days), and a Facilities Study (sixty (60) to ninety (90) Calendar Days depending on whether upgrades to the electric system are identified) as set out in Section F. The advance submission of the Interconnection Request will better accommodate Distribution Provider's review and studies in a manner consistent with the timelines established in this Rule that may be required to complete the processing for interconnection of non-inverter based Generators and/or Generators with non-Certified Equipment.

3. Unless Net Generator Output Metering is required, Metering Equipment necessary to obtain service under PUC sections 2827 and 2827.8 shall be installed and operational within the timeframe required to complete Interconnection.

4. An Applicant with a Fast Track Interconnection Request for a Net Energy Metering or Non-Export Generating Facility that 1) goes for more than one year from the date of Distribution Provider's written notification that the Interconnection Request is valid without a signed Generator Interconnection Agreement, or 2) has a Generating Facility that has not been approved for Parallel Operation within one year of completion of all applicable review and/or studies, is subject to withdrawal by Distribution Provider; however, Distribution Provider may not deem the Interconnection Request to be withdrawn if the i) Applicant provides reasonable evidence that the Interconnection Request is still active or ii) if the delay is at no fault of Applicant.

14. *Compliance with Established Timelines*

Distribution Provider shall use Reasonable Efforts in meeting all the timelines provided for under this Rule. In the event Distribution Provider is not able to meet a particular timeline set forth in this Rule, Distribution Provider shall notify Applicant as soon as practicable and provide an estimated completion date with an explanation of the reasons why additional time is needed. Any Applicant dissatisfied with the Reasonable Efforts of Distribution Provider may use the informal procedures set out in Section F.1.d and/or the Dispute Resolution process in Section K.

15. Modification of Timelines

Distribution Provider and Applicant, for good cause, may agree to modify any of the timelines in this Rule. The modified timeline shall be mutually agreed upon, in writing, between Distribution Provider and Applicant.

E. Interconnection Request Submission Process

1. Pre-Application Report

Upon receipt of a completed Pre-Application Report Request and a non-refundable processing fee of $300, Distribution Provider shall provide pre-application data described in

this section within ten (10) Business Days of receipt. The Pre-Application Report Request shall include a proposed Point of Interconnection, generation technology and fuel source. The proposed Point of Interconnection shall be defined by latitude and longitude, site map, street address, utility equipment number (e.g. pole number), meter number, account number or some combination of the above sufficient to clearly identify the location of the point of interconnection.

The Pre-Application Report will include the following information if available:

a. Total Capacity (MW) of substation/area bus or bank and circuit likely to serve proposed site.
b. Allocated Capacity (MW) of substation/area bus or bank and circuit likely to serve proposed site.
c. Queued Capacity (MW) of substation/area bus or bank and circuit likely to serve proposed site.
d. Available Capacity (MW) of substation/area bus or bank and circuit most likely to serve proposed site.
e. Substation nominal distribution voltage or transmission nominal voltage if applicable.
f. Nominal distribution circuit voltage at the proposed site.
g. Approximate circuit distance between the proposed site and the substation.
h. Relevant Line Section(s) peak load estimate, and minimum load data, when available.
i. Number of protective devices and number of voltage regulating devices between the proposed site and the substation/area.
j. Whether or not three-phase power is available at the site.
k. Limiting conductor rating from proposed Point of Interconnection to distribution substation.
l. Based on proposed Point of Interconnection, existing or known constraints such as, but not limited to, electrical dependencies at that location, short circuit interrupting capacity issues, power quality or stability issues on the circuit, capacity constraints, or secondary networks.

The Pre-Application Report need only include pre-existing data. A Pre-Application Report request does not obligate Distribution Provider to conduct a study or other analysis of the proposed project in the event that data is not available. If Distribution Provider cannot complete all or some of a Pre-Application Report due to lack of available data, Distribution Provider will provide Applicant with a Pre-Application Report that includes the information that is available.

In requesting a Pre-Application Report, Applicant understands that 1) the existence of “Available Capacity” in no way implies that an interconnection up to this level may be completed without impacts since there are many variables studied as part of the interconnection review process, 2) the distribution system is dynamic and subject to change and 3) data provided in the Pre-Application Report may become outdated and not useful at the time of submission of the complete Interconnection Request. Notwithstanding any of the provisions of this Section, Distribution Provider shall, in good faith, provide Pre- Application Report data that represents the best available information at the time of reporting.

2. *Interconnection Request Process*

a. Applicant Initiates Contact with Distribution Provider

Upon request, Distribution Provider will provide information and documents (such as sample agreements, Interconnection Request, technical information, listing of Certified Equipment, Initial and Supplemental Review fee information, applicable tariff schedules and Metering requirements) to a potential Applicant. Unless otherwise agreed upon, all such information shall normally be sent to an Applicant within three (3) Business Days following the initial request from Applicant. Distribution Provider will establish an individual representative as the single point of contact for Applicant, but may allocate responsibilities among its staff to best coordinate the Interconnection of an Applicant's Generating Facility.

b. Applicant Selects a Study Process

An Applicant may select one of two interconnection evaluation processes in accordance with the following eligibility requirements:

i) Fast Track Eligibility

Non-Exporting and Net Energy Metered Generating Facilities are eligible for Fast Track evaluation regardless of the Gross Nameplate Rating of the proposed Generating Facility. Exporting Generating Facilities with a Gross Nameplate Rating no larger than 3.0 MWs on a 12 kV, 16 kV or 33 kV interconnection for Southern California Edison, 1.5 MW on a 12 kV interconnection for San Diego Gas & Electric, and 3.0 MW on a 12 kV or higher interconnection for PG&E are also eligible for Fast Track evaluation.

For an Exporting Generating Facility that agrees to the installation of Distribution Provider-approved protective devices at Applicant's cost such that the Exporting Generating Facility's net export will never exceed the Fast Track eligibility limits, the Generating Facility's net export will be considered for purposes of Fast Track eligibility. However, these Applicants will be required to complete Supplemental Review and should pre-pay for Supplemental Review at the time the Interconnection Request is submitted.

ii) Detailed Study Eligibility

Generating Facilities that are not eligible for Fast Track evaluation must apply for Detailed Study. An Applicant may also choose to apply directly for Detailed Studies. Detailed Study shall require either (i) an Independent Study Process, (ii) a Distribution Group Study Process, or (iii) a Transmission Cluster Study Process. The specific study process used will depend on the results of the Electrical Independence Tests for the Transmission and Distribution Systems.

iii) Request for Deliverability Assessment

Unless specified otherwise in the Interconnection Request, Generating Facilities eligible to be studied under the Fast Track Process, Independent Study Process or Distribution Group Study Process will be assumed to have selected Energy-Only Deliverability Status. Nothing herein will prohibit an Applicant from seeking a deliverability assessment in accordance with the WDAT. Applicants studied under the Transmission Cluster Study Process may seek a deliverability assessment in accordance with the applicable provisions of the WDAT.

c. Applicant Completes an Interconnection Request

All Applicants shall submit a complete and valid Interconnection Request. When applicable per Table E.1, a nonrefundable $800 Interconnection Request fee, and for Applicants that elect Detailed Study in the Interconnection Request, a study deposit shall be required per instructions in the Interconnection Request. Applicants who proceed to Detailed Study after Fast Track will provide a Detailed Study deposit as specified in Section E.3.a.

Applicant shall submit a separate Interconnection Request for each Point of Interconnection. An Interconnection Request for the expansion of capacity of an existing operating Generating Facility shall be treated the same as an Interconnection Request for a new Generating Facility pursuant to this Rule.

Table E.1

Summary of Interconnection Request Fees, Deposits and Exemptions

Generating Facility Type	Interconnection Request Fee	Supplemental Review Fee	Detailed Study Deposit	Additional Commissioning Test Verification
Non-Net Energy Metering	$800	$2,500	For a Generating Facility with a Gross Nameplate Rating of 5 MW or less and applying to the Independent Study Process or the Distribution Group Study Process, $10,000 for a System Impact Study and $15,000 for a Facilities Study. For a Generating Facility with a Gross Nameplate Rating above 5 MW, $50,000 plus $1,000 per MW of electrical output of the Generating Facility, or the increase in electrical output of the existing Generation Facility, as applicable, rounded up to the nearest whole MW, up to a maximum of $250,000	$150/Person Hour *
Net Energy Metering (per PUC sections 2827, 2827.8, or 2827.10 (per D.02-03-057)	$0	$0	$0	N/A
Solar 1MW or less that does not sell power to Distribution Provider (per D.01-07-027)	First $5,000 of study fees waived			$150/Person Hour *

*Plus additional costs for travel, lodging and meals.

d. Site Exclusivity

Documentation of Site Exclusivity must be submitted with the Interconnection Request. This requirement does not apply to Applicants with NEM or Non-Export Generating Facilities.

3. Interconnection Request Fee and Study Deposit

The Interconnection Request fee shall be waived for Interconnection Requests pursuant to PUC Sections 2827, 2827.8, or 2827.10, per Commission Decision 02-03-057 and for solar-powered Generating Facilities that do not sell power to Distribution Provider per Commission Decision 01-07-027. Generating Facilities eligible for Net Energy Metering under Sections 2827, 2827.8, or 2827.10 are exempt from any costs associated with Interconnection Studies. Interconnection Study fees for solar Generating Facilities up to 1 MW interconnecting to the Distribution System that do not sell power to the grid will be waived up to the amount of $5,000.

a. Detailed Study Deposit

i) Detailed Study Deposit

To proceed with Detailed Study, Applicant must submit a detailed study deposit.

For a Generating Facility with a Gross Nameplate Rating of 5 MW or less, Applicant must submit a detailed study deposit of $10,000 for the Interconnection System Impact Study, and where an Interconnection Facilities Study is required, an additional $15,000 deposit must be submitted as required in Section F.3.d.viii.

For a Generating Facility with a Gross Nameplate Rating above 5 MW, Applicant must submit a Detailed Study deposit equal to $50,000 plus $1,000 per MW of electrical output of the Generating Facility, or the increase in electrical output of the existing Generating Facility, as applicable, rounded up to the nearest whole MW, up to a maximum of $250,000.

ii) Use of Detailed Study Deposit

The Detailed Study deposit shall be applied to pay for prudent costs incurred by Distribution Provider, the CAISO, or third parties at the direction of Distribution Provider or CAISO, as applicable, to perform and administer the Interconnection Studies. Deposit amounts that exceed the prudent costs incurred by Distribution Provider shall be refunded to Applicant within sixty (60) Calendar Days following the issuance of the final study applicable to the Interconnection Request.

The Detailed Study deposits shall be refundable as follows:

(1) Should an Interconnection Request be withdrawn by Applicant or be deemed withdrawn by Distribution Provider by written notice under Section F.6 on or before thirty (30) Calendar Days following the scoping meeting, Distribution Provider shall refund to Applicant any portion of Applicant's detailed study deposit that exceeds the costs Distribution Provider, CAISO, and third parties have incurred on Applicant's behalf, including interest from the date of receipt by

Distribution Provider to the date of payment to Applicant. The applicable interest shall be one-twelfth of the Federal Reserve three-month Commercial Paper Rate – Non-Financial, from the Federal Reserve Statistical Release H.15 (expressed as an annual rate).

(2) Should an Interconnection Request that has been moved into the Detailed Study Process be withdrawn by Applicant or be deemed withdrawn by Distribution Provider by written notice under Section F.6 more than thirty (30) Calendar Days after the scoping meeting, but on or before thirty (30) Calendar Days following the results meeting for the Interconnection System Impact Study, Distribution Provider shall refund to Applicant the difference between (i) Applicant's detailed study deposit and (ii) the greater of the costs Distribution Provider, CAISO, and third parties have incurred on Applicant's behalf or one-half of the original detailed study deposit up to a maximum of $100,000, including interest from the date of receipt by Distribution Provider to the date of payment to Applicant. The applicable interest shall be one-twelfth of the Federal Reserve three-month Commercial Paper Rate – Non-Financial, from the Federal Reserve Statistical Release H.15 (expressed as an annual rate).

(3) Should an Interconnection Request be withdrawn by Applicant or be deemed withdrawn by Distribution Provider by written notice under Section F.6 at any time more than thirty (30) Calendar Days after the results meeting for the Interconnection System Impact Study, the detailed study deposit shall be non-refundable.

(4) Upon execution of a Generator Interconnection Agreement by an Applicant and Distribution Provider Distribution Provider shall refund to Applicant any portion of Applicant's detailed study deposit that exceeds the costs Distribution Provider, CAISO, and third parties have incurred on Applicant's behalf, including interest from the date of receipt by Distribution Provider to the date of payment to Applicant. The applicable interest shall be one-twelfth of the Federal Reserve three-month Commercial Paper Rate – Non-Financial, from the Federal Reserve Statistical Release H.15 (expressed as an annual rate).

iii) Notwithstanding the foregoing, an Applicant that withdraws or is deemed to have withdrawn its Interconnection Request shall be obligated to pay to Distribution Provider all costs in excess of the detailed study deposit that have been prudently incurred or irrevocably have been committed to be incurred with respect to that Interconnection Request prior to withdrawal. Distribution Provider will reimburse the CAISO or third parties, as applicable, for all work performed on behalf of the withdrawn Interconnection Request at Distribution Provider's direction. Applicant must pay all monies due before it is allowed to obtain any Interconnection

Study data or results. Any proceeds of the Detailed Study deposit not otherwise reimbursed to Applicant or applied to costs incurred or irrevocably committed to be incurred for the interconnection studies shall be applied as directed by the Commission. Where an Applicant with remaining proceeds from a Detailed Study deposit cannot be located, such remaining proceeds shall escheat to the State pursuant to the Unclaimed Property Law commencing with the California Code of Civil Procedure § 1500.

iv) Special Circumstances

Applicant may propose, and Distribution Provider may agree to reduced costs for reviewing atypical Interconnection Requests, such as Interconnection Requests submitted for multiple Generating Facilities, multiple sites, or otherwise as conditions warrant.

4. Interconnection Cost Responsibility

An Applicant, or a Producer where those are different entities, is responsible for all fees and/or costs, including Commissioning Testing, required to complete the interconnection process. A Producer that interconnects to Distribution Provider's Distribution or Transmission System is responsible for all costs associated with Parallel Operation to support the safe and reliable operation of the Distribution and Transmission System. Generating Facilities eligible for Net Energy Metering under California PUC sections 2827, 2827.8 or 2827.10 are exempt from any costs associated with Distribution or Network Upgrades.

a. Costs of Interconnection and Parallel Operation

The Interconnection and Parallel Operation of a Producer may trigger the need for Interconnection Facilities, Special Facilities or Added Facilities, Upgrades, Delivery Network Upgrades, and/or Reliability Network Upgrades. Interconnection Facilities installed on Producer's side of the PCC may be owned, operated and maintained by Producer or Distribution Provider. Interconnection Facilities installed on Distribution Provider's side of the PCC and Distribution System modifications shall be owned, operated, and maintained only by Distribution Provider.

b. Methodology and Timing of Cost Identification

Any costs triggered by a Producer are based on Producer's unique Interconnection requirements, Producer's impact on the Distribution System and/or Transmission System following allocation of capacity to earlier-queued interconnection requests, and Producer's electrical interdependence with any earlier-queued interconnection requests. Earlier-queued interconnection requests include interconnection requests under any applicable tariff.

c. Timing of Cost Identification

For Applicants to Fast Track, Independent Study Process, or Distribution Group Study Process, costs may be identified during the study process, or after the study process is complete and a Generator Interconnection Agreement is executed. The

purpose of later identification of costs is to facilitate Applicant's Interconnection while accommodating incomplete interconnection studies for earlier-queued interconnection requests to the same line, incomplete interconnection studies for earlier-queued interconnection requests with which Applicant is electrically interdependent with respect to short circuit duty, withdrawal of earlier-queued interconnection requests for Interconnection to the Distribution or Transmission System, and delay or cancellation of planned Distribution System Upgrades.

d. Producer Costs During Parallel Operation

All Producers are required to provide and maintain Interconnection Facilities, for the duration of the Generator Interconnection Agreement, that meet Distribution Provider's technical design and operating standards for Parallel Operation as set out in Section H, including any updates to those standards. This includes Producer responsibility for costs associated with changes to the operating characteristics at the Point of Interconnection necessitated by Distribution Provider's upgrades to the Transmission or Distribution System from time to time.

e. Cost Allocation

Except where exempt by law or Commission decision, costs triggered by an Interconnection Request under the Fast Track process or the Independent Study Process are the responsibility of the triggering Interconnection Request. Costs triggered by an Interconnection Request under this Rule that transitions to the Transmission Cluster Study Process are allocated pursuant to the terms of Distribution Provider's WDAT or other applicable tariff.

f. Summary Tables

Table E.2 summarizes cost responsibility for costs and fees that may arise in the course of the interconnection process for NEM and non-NEM Applicants. Table E.3 summarizes cost responsibility for costs and fees that may arise in the course of the interconnection process for NEM Applicants under various sequences of interconnecting NEM and non-NEM Generators on the same PCC interconnecting to the Distribution or Transmission System.

Table E.2 Summary of Producer Cost Responsibility

Generating Facility Type	Interconnection Request Fee		Supplemental Review Fee		Detailed Study Cost (Independent Study Process, Distribution Group Study Process, or Transmission Cluster Study Process)		Interconnection Facilities Cost		Distribution Upgrades Cost		Transmission Network Upgrade Cost (Ref. CAISO Tariff Sec. --)	
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
Non-NEM	X		X		X		X		X[a]		X	
NEM		X		X		X	X			X		X

Table E.3 Summary of Producer Cost Responsibility for Multiple Tariff Interconnections

Existing Generating Facility	New Generating Facility	Interconnection Request Fee		Supplemental Review Fee		Detailed Study Cost		Interconnection Facilities Cost		Distribution Upgrades Cost	
		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 operation of a non-NEM eligible Generator at any time to export is treated as a simultaneous NEM and non-NEM Interconnection Request, resulting in associated costs being allocated to Producer.

5. Interconnection Request Validation and Assignment of Queue Position

Any Applicant for Interconnection to Distribution Provider's Distribution or Transmission System must submit a complete and valid Interconnection Request. An Interconnection Request will be considered complete and valid when all items required for an Interconnection Request have been received by Distribution Provider and deemed valid by Distribution Provider.

a. Acknowledgement of Interconnection Request

Distribution Provider shall provide a first written notification to the Interconnection Customer within ten (10) Business Days of receipt of the Interconnection Request, which notice shall state whether the Interconnection Request is deemed complete and valid.

b. Deficiencies in Interconnection Request

i) First Notification of Deficiency

If an Interconnection Request fails to meet the requirements, Distribution Provider shall state in its first written notification the reasons for such failure and that the Interconnection Request does not constitute a valid request.

Applicant shall provide Distribution Provider the additional requested information needed to constitute a complete and valid request within ten (10) Business Days from the date of the first written notification that the Interconnection Request is invalid.

ii) Second Notification of Deficiency

Distribution Provider shall provide a second written notification to Applicant within ten (10) Business Days of receipt of the additional requested information, stating whether the Interconnection Request is valid or the reasons for any failure.

Applicant shall provide Distribution Provider the additional requested information needed to constitute a complete and valid request within five (5) Business Days from the date of the second written notification that the Interconnection Request is invalid.

iii) Extension Request

Upon request, Applicant can receive one extension of up to twenty (20) Business Days to resolve deficiencies in the Interconnection Request.

iv) Failure to Resolve Deficiencies

If Applicant does not resolve deficiencies in the Interconnection Request within the time frames set out above, Distribution Provider will deem the Interconnection Request withdrawn. Applicant may submit a new Interconnection Request.

Applicants with invalid Interconnection Requests under this Section may seek relief under the dispute resolution provisions in Section K by so notifying Distribution Provider within two (2) Business Days of receipt of the first or second written notification that the Interconnection Request is incomplete and/or invalid.

c. Assignment of Queue Position

Distribution Provider shall assign a queue position to all non-Net Energy Metering Applicants. If there were no deficiencies in the Interconnection Request, the queue position will be based on the date Distribution Provider received the Interconnection Request. If there were deficiencies in the Interconnection Request, the queue position will be based on the date Distribution Provider determines an Interconnection Request to be complete and valid. Should Distribution Provider not meet any deadline for providing the first (Section E.5.b.i) or second written notification (Section E.5.b.ii) to Applicant regarding the Interconnection Request, Applicant's queue position shall be set on the final day of the period in which Distribution Provider was obligated to provide such written notification, provided, however, that Applicant meets deadlines as set out above to submit any additional information required for a valid Interconnection Request following such written notification under Section E.5.b.i or E.5.b.ii, and that Distribution Provider determines that the Interconnection Request is valid.

Distribution Provider shall maintain a single queue for all non-Net Energy Metering Interconnection Requests governed by this Rule with a Point of Interconnection on Distribution Provider's Distribution System. For Interconnection Requests that are studied under the Transmission Cluster Study Process, the queue position will be the applicable cluster's queue position.

d. Publication of the Interconnection Queue

Distribution Provider shall publish and update monthly on its website the interconnection queue for all Interconnection Requests governed by this Rule with a Point of Interconnection on Distribution Provider's Distribution System that have been assigned a queue position. Nothing here prohibits Distribution Provider from publishing this queue combined with other interconnection requests to Distribution Provider's Distribution System. The published interconnection queue may include the following information for each Interconnection Request governed by this Rule, subject to Energy Division approval:

i) Interconnection Request and Queue Position Data

(i) The assigned number, if any;

(ii) the queue position;

(iii) the date the Interconnection Request was received by Distribution Provider;

(iv) the date the Interconnection Request was determined to be complete and valid;

(v) the review process to which Applicant originally applied (Fast Track, Independent Study Process, Transmission Cluster Study Process);

(vi) the original requested In-Service Date;

(vii) the currently requested In-Service Date;

(viii) the agreed-upon Commercial Operation Date or actual Commercial Operation Date.

ii) Applicant Generating Facility/Storage System and Point of Interconnection Data

(ix) the maximum summer and winter MW electrical output;

(x) the type of generating or storage facility to be constructed;

(xi) the fuel source;

(xii) the proposed Point of Interconnection location by county and state;

(xiii) the proposed Point of Interconnection location by substation/area and, if applicable, circuit;

F. Review Process For Interconnection Requests

1. Overview of the Interconnection Review Process

a. Valid Interconnection Request

After an Interconnection Request is deemed complete and valid, Distribution Provider will perform Fast Track evaluation unless an Applicant applies for Detailed Study or is not eligible for Fast Track evaluation. The eligibility requirements for Fast Track evaluation are set forth in Section E.2.b. See Section D.13 for special provisions related to the timeframe and costs applicable to NEM Applicants.

b. Fast Track Review

Fast Track evaluation allows for rapid review of the Interconnection of those Generating Facilities that do not require Detailed Study. Regardless of study process, all Generating Facilities shall be designed to meet the applicable requirements of Section H which identifies Generating Facility Design and Operation Requirements.

Fast Track review consists of an Initial Review and, if required, a Supplemental Review. The need for Supplemental Review will be determined based on the results of Initial Review Screens A through M in Section G. Applicants that successfully pass Initial Review Screens A through M will be allowed to interconnect without Supplemental Review.

If Supplemental Review is required, Distribution Provider will notify Applicant and Applicant must pay a nonrefundable Supplemental Review fee or withdraw its Interconnection Request. Supplemental Review shall consist of the application of Screens N through P in Section G.2. Applicants that pass Screens N through P will be allowed to interconnect without additional review.

If Supplemental Review reveals that a proposed Generating Facility cannot be interconnected to Distribution Provider's Distribution System by means of Fast Track evaluation, Distribution Provider will notify Applicant that Detailed Study will be required.

Failure to pass Fast Track evaluation means only that further review and/or study are required before the Generating Facility can be interconnected with Distribution Provider's Distribution System. It does not mean that the Generating Facility cannot be interconnected.

c. Detailed Studies

Detailed Study will be required for Interconnection Requests that either apply directly for Detailed Study, are not eligible for Fast Track evaluation, or do not pass Fast Track evaluation. Detailed Study shall consist of one of three study processes: (i) Independent Study Process; (ii) Distribution Group Study Process; or (iii) Transmission Cluster Study Process. The specific study process that is applied will depend on the results of Screens Q and R in Section G.3. Interconnection Requests that are found to be electrically interdependent with earlier-queued interconnection requests with impacts on the Transmission System, and thereby fail screen Q, will proceed to the Transmission Cluster Study Process. Interconnection Requests that are not electrically interdependent with earlier-queued interconnection requests with impacts on the Transmission System, and thereby pass screen Q, will be studied under either the Independent Study Process or the Distribution Group Study Process.

d. Compliance with Timelines

Distribution Provider shall use Reasonable Efforts in meeting all the timelines set out in this Rule, or mutually modified by Distribution Provider and Applicant pursuant to Section D.15. Each Distribution Provider shall designate an ombudsman with authority to resolve disputes over missed timelines. The identity, role, and contact information of the ombudsman shall be available on Distribution Provider's website.

If at any time an Applicant is dissatisfied with the Reasonable Efforts of Distribution Provider to meet the timelines in this Section, Applicant may use the following procedures:

(i) Contact the ombudsman designated by Distribution Provider;

(ii) If the Distribution Provider ombudsman is unable to resolve the dispute within ten (10) Business Days, Applicant may either:

a) Contact the Consumer Affairs Branch (CAB) at the Commission.

b) Upon mutual agreement with Distribution Provider, make a written request for mediation to the Alternative Dispute Resolution (ADR) Coordinator in the Commission's Administrative Law (ALJ) Division. The request may be made by electronic mail to adr_program@cpuc.ca.gov, and shall state "Rule 21" in the subject line. The request shall contain the relevant facts of the timeline dispute. A copy of the request shall be sent to the Distribution Provider ombudsman. Provided that resources are available, the mediator assigned shall schedule a mediation with Applicant and Distribution Provider within ten (10) Business Days of receiving the request.

At any time, Applicant may file a formal complaint before the Commission pursuant to California PUC section 1702 and Article 4 of the Commission's Rules of Practice and Procedure.

2. Fast Track Interconnection Review Process

a. Initial Review

Upon receipt of a complete and valid Interconnection Request, Distribution Provider shall perform Initial Review using the process in Section G.1. The Initial Review determines if (i) the Generating Facility qualifies for Fast Track Interconnection through Initial Review, or (ii) the Generating Facility requires a Supplemental Review. Absent extraordinary circumstances, Distribution Provider shall notify Applicant in writing of the results of Initial Review within fifteen (15) Business Days following validation of an Interconnection Request.

For Interconnection Requests that pass Initial Review and do not require Interconnection Facilities or Distribution Upgrades, Distribution Provider shall provide Applicant with a Generator Interconnection Agreement within fifteen (15) Business Days of providing notice of Initial Review results. For Interconnection Requests that pass Initial Review but do require Interconnection Facilities or Distribution Upgrades, within fifteen (15) Business Days of providing notice of Initial Review results, Distribution Provider shall provide Applicant with a non-binding cost estimate of the Interconnection Facilities or Distribution Upgrades.

For all Interconnection Requests that pass Initial Review, refer to Section F.2.e for cost responsibility and time frames for completing the Generator Interconnection Agreement.

For Interconnection Requests that fail Initial Review, Distribution Provider shall provide the technical reason, data and analysis supporting the Initial Review results in writing and provide Applicant the option to either attend an Initial Review results meeting or proceed directly to Supplemental Review. Net Energy Metering Applicants covered under Section D.13.1 shall proceed directly to Supplemental Review without an Initial Review results meeting. Applicant shall notify Distribution Provider within ten (10) Business Days following such notification whether to (i) proceed to an Initial Review results meeting, (ii) proceed to Supplemental Review, or (iii) withdraw the Interconnection Request. Applicant may request one extension of no more than ten (10) Business Days to respond. If Applicant fails to notify Distribution Provider within ten (10) Business Days of such notification, or at the end of the extension, if one was requested, the Interconnection Request shall be deemed withdrawn.

No changes may be made to the planned Point of Interconnection or Generating Facility size included in the Interconnection Request during the Initial Review Process, unless such changes are agreed to by Distribution Provider. Where agreement has not been reached, Applicants choosing to change the Point of Interconnection or Generating Facility size must reapply and submit a new Interconnection Request.

Applicants that elect to proceed to Supplemental Review shall provide a nonrefundable Supplemental Review fee set forth in Section E.2.c with their response.

The Supplemental Review fee shall be waived for Interconnection Requests requesting Interconnection pursuant to PUC sections 2827, 2827.8, or 2827.10, per Commission Decision D. 02-03-057 and for solar-powered Generating Facilities that do not sell power to Distribution Provider, per Commission Decision D. 01-07-027.

b. Optional Initial Review Results Meeting

Within five (5) Business Days of Applicant's request for an Initial Review results meeting, Distribution Provider shall contact Applicant and offer to convene a meeting at a mutually acceptable time to review the Initial Review screen analysis and related results to determine what modifications, if any, may permit the Generating Facility to be connected safely and reliably without Supplemental Review.

If modifications that obviate the need for Supplemental Review are identified, and Applicant and Distribution Provider agree to such modifications, Distribution Provider shall provide Applicant with a Generator Interconnection Agreement within fifteen (15) Business Days of the Initial Review results meeting if no Interconnection Facilities or Distribution Upgrades are required. If Interconnection Facilities or Distribution Upgrades are required, Distribution Provider shall provide Applicant with a non-binding cost estimate of any Interconnection Facilities or Distribution Upgrades within fifteen (15) Business Days of the Initial Review results meeting. For all Interconnection Requests that pass Initial Review, refer to Section F.2.e for cost responsibility and time frames for completing the Generator Interconnection Agreement.

If Applicant and Distribution Provider are unable to identify or agree to modifications that enable Applicant to pass Initial Review, Applicant shall notify Distribution Provider within five (5) Business Days of the Initial Review results meeting whether it would like to proceed with Supplemental Review or withdraw its Interconnection Request. Applicant may request one extension of no more than five (5) Business Days to respond. If Applicant fails to notify Distribution Provider within five (5) Business Days of the Initial Review results meeting, or at the end of the extension, if one was requested, the Interconnection Request shall be deemed withdrawn.

c. Supplemental Review

If Applicant requests Supplemental Review and submits a nonrefundable Supplemental Review fee, if required, Distribution Provider shall complete Supplemental Review within twenty (20) Business Days, absent extraordinary circumstances, following authorization and receipt of the fee. Supplemental Review determines if (i) the Generating Facility qualifies for Fast Track Interconnection, or (ii) the Generating Facility requires Detailed Study.

For Interconnection Requests that pass Supplemental Review and do not require Interconnection Facilities or Distribution Upgrades, Distribution Provider shall provide Applicant with a Generator Interconnection Agreement within fifteen (15) Business Days of providing notice of Supplemental Review results. For Interconnection Requests that pass Supplemental Review and do require Interconnection Facilities or Distribution

Upgrades, within fifteen (15) Business Days of providing notice of Supplemental Review results, Distribution Provider shall provide Applicant with a non-binding cost estimate of any Interconnection Facilities or Distribution Upgrades. For all Interconnection Requests that pass Supplemental Review, refer to Section F.2.e for cost responsibility and time frames for completing the Generator Interconnection Agreement.

For Interconnection Requests that fail Supplemental Review, Distribution Provider shall provide the technical reason, data and analysis supporting the Supplemental Review results in writing, including, if Distribution Provider can make the determination, which Detailed Study track Applicant qualifies for, and provide Applicant the option to attend a Supplemental Review results meeting or proceed directly to Detailed Study. Applicant shall notify Distribution Provider within fifteen (15) Business Days following such notification whether to (i) proceed to a Supplemental Review results meeting, (ii) proceed to Detailed Study, or (iii) withdraw the Interconnection Request. Applicant may request one extension of no more than fifteen (15) Business Days to respond. If Applicant fails to notify Distribution Provider within fifteen (15) Business Days of such notification, or at the end of the extension, if one was requested, the Interconnection Request shall be deemed withdrawn.

Applicants that elect to proceed to Detailed Study shall provide the applicable study deposit set forth in Section E.3.a. Detailed Study fees for solar Generating Facilities up to 1 MW interconnecting to the Distribution System that do not sell power to Distribution Provider will be waived up to the amount of $5,000. Generating Facilities eligible for Net Energy Metering under PUC sections 2827, 2827.8, or 2827.10 are exempt from any costs associated with Detailed Studies.

d. Optional Supplemental Review Results Meeting

Within five (5) Business Days of Applicant's request for a Supplemental Review results meeting, Distribution Provider shall contact Applicant and offer to convene a meeting at a mutually acceptable time to review the Supplemental Review screen analysis and related results to determine what modifications, if any, may permit the Generating Facility to be connected safely and reliably without Detailed Study.

If modifications that obviate the need for Detailed Study are identified and Applicant and Distribution Provider agree to such modifications, Distribution Provider shall provide Applicant with a Generator Interconnection Agreement within fifteen (15) Business Days of the Supplemental Review results meeting if no Interconnection Facilities or Distribution Upgrades are required. If Interconnection Facilities or Distribution Upgrades are required, Distribution Provider shall provide Applicant with a non-binding cost estimate of any Interconnection Facilities or Distribution Upgrades within fifteen (15) Business Days of the Supplemental Review results meeting. For all Interconnection Requests that pass Supplemental Review, refer to Section F.2.e for cost responsibility and time frames for completing the Generator Interconnection Agreement.

If Applicant and Distribution Provider are unable to identify or agree to modifications, Applicant shall notify Distribution Provider within twenty (20) Business Days of the Supplemental Review Results Meeting whether it would like to proceed with Detailed Study or withdraw its Interconnection Request. Applicant may request one extension of no more than twenty (20) Business Days to respond. If Applicant fails to notify Distribution Provider within twenty (20) Business Days of the Supplemental Review results meeting, or at the end of the extension, if one was requested, the Interconnection Request shall be deemed withdrawn. Applicants that elect to proceed to Detailed Study shall provide the applicable study deposit set forth in Section E.3.a.

e. Execution of the Generator Interconnection Agreement

Following the receipt of a cost estimate for any Distribution Upgrades and/or Interconnection Facilities that have been identified (Applicants that did not require a cost estimate may proceed directly to the paragraph below), Applicant shall notify Distribution Provider within fifteen (15) Business Days whether Applicant: (i) requests a Generator Interconnection Agreement, or (ii) withdraws its Interconnection Request. Applicant may request one extension of no more than fifteen (15) Business Days to respond. If Applicant fails to notify Distribution Provider within fifteen (15) Business Days, or at the end of the extension, if one was requested, the Interconnection Request shall be deemed withdrawn. If Applicant elects to proceed to a Generator Interconnection Agreement, Distribution Provider shall provide Applicant with a Generator Interconnection Agreement for Applicant's signature within fifteen (15) Business Days of Applicant's request.

Upon receipt of a draft Generator Interconnection Agreement, Applicant has ninety (90) Calendar Days to sign and return the Generator Interconnection Agreement. Applicant shall provide written comments, or notification of no comments, to the draft Generator Interconnection Agreement and appendices within thirty (30) Calendar Days. At the request of Applicant, Distribution Provider shall begin negotiations with Applicant at any time after Distribution Provider provides Applicant with the draft Generator Interconnection Agreement, which contains in its appendices the cost estimate for any Distribution Upgrades and/or Interconnection Facilities that have been identified by Distribution Provider. Distribution Provider and Applicant shall negotiate concerning the cost estimate, or any disputed provisions of the appendices to a draft Generator Interconnection Agreement, for not more than ninety (90) Calendar Days after Distribution Provider provides Applicant with the Generator Interconnection Agreement. If Applicant determines that negotiations are at an impasse, it may request termination of the negotiations and initiate Dispute Resolution procedures pursuant to Section K. If Applicant fails to sign the Generator Interconnection Agreement or initiate Dispute Resolution within ninety (90) Calendar Days, the Interconnection Request shall be deemed withdrawn.

After Applicant, or a Producer where those are different entities, has executed the Generator Interconnection Agreement, Distribution Provider will commence design, procurement, construction and installation of Distribution Provider's Distribution Upgrades and/or Interconnection Facilities that have been identified in the Generator Interconnection Agreement. Distribution Provider and Producer will use good faith efforts to meet schedules in accordance with the requirements of the Generator Interconnection Agreement and estimated costs as appropriate. Producer is responsible for all costs associated with Parallel Operation to support the safe and reliable operation of the Distribution System and Transmission System as set forth in Section E.4.

Distribution Provider and Producer shall negotiate in good faith concerning a schedule for the construction of Distribution Provider's Interconnection Facilities and Distribution Upgrades.

3. Detailed Study Interconnection Review Process

a. Detailed Study Track Selection Process

Applicants that apply directly for Detailed Study may elect to enter the Transmission Cluster Study Process without the application of Screens Q and R. For Applicants that applied for Fast Track evaluation but failed the Supplemental Review, Distribution Provider shall determine, to the extent practicable, the Detailed Study track for which Applicant is eligible and provide that information with the Supplemental Review Results as set out in section F.2.c. For all other Applicants, the specific Detailed Study track for which Applicant is eligible will be determined by the application of Screens Q and R. For Applicants that require application of Screens Q and R, absent extraordinary circumstances, within twenty (20) Business Days following validation of an Interconnection Request and receipt of the appropriate study deposit set forth in Section E.3.a, Distribution Provider will apply Screen Q, and if applicable, Screen R and provide Applicant with the screen results as set forth below.

If Applicant fails Screen Q, Distribution Provider shall provide the data and analysis supporting Screen Q results in writing and provide Applicant the option to proceed to the Transmission Cluster Study Process. Applicant shall notify Distribution Provider within twenty (20) Business Days following such notification whether it would like to (i) proceed to the Transmission Cluster Study Process or (ii) withdraw the Interconnection Request. Applicant may request one extension of no more than twenty (20) Business Days to respond. If Applicant fails to notify Distribution Provider within twenty (20) Business Days of receiving the Screen Q results, or at the end of the extension, if one was requested, the Interconnection Request shall be deemed withdrawn.

If Applicant passes Screen Q, but fails Screen R, Distribution Provider shall provide the data and analysis supporting the Screen R results in writing and provide

Applicant the option to proceed to the Distribution Group Study Process. Applicant shall notify Distribution Provider within twenty (20) Business Days following such notification whether it would like to (i) proceed to the Distribution Group Study Process or (ii) withdraw the Interconnection Request. Applicant may request one extension of no more than twenty (20) Business Days to respond. If Applicant fails to notify Distribution Provider within twenty (20) Business Days of receiving Screen R results, or at the end of the extension, if one was requested, the Interconnection Request shall be deemed withdrawn.

If Applicant passes Screens Q and R, the Interconnection Request will be processed in accordance with Section F.3.d below.

If Applicant elects to proceed to the Distribution Group Study Process, the Interconnection Request will be processed in accordance with Section F.3.b below.

If Applicant elects to proceed to the Transmission Cluster Study Process, Interconnection Request will be processed in accordance with Section F.3.c below.

b. Distribution Group Study Process

Interconnection Requests that would otherwise qualify for the Distribution Group Study Process will be studied under the Transmission Cluster Study pursuant to Section F.3.c except as described below:

i. If Applicant fails Screen R because there is only one (1) earlier-queued, interconnection request with which Applicant is electrically interdependent and that is currently undergoing an independent study process, Distribution Provider shall notify Applicant at the same time that it provides the Screen R results of the expected completion date for the earlier-queued interconnection request. Distribution Provider shall provide Applicant the option of (1) waiting until the earlier-queued interconnection request has completed the independent study process and then initiating the Independent Study Process at that time, or (2) proceeding directly to the Transmission Cluster Study Process pursuant to Section F.3.c. If Applicant chooses option 1, the timeline for completing Applicant's Independent Study Process will not begin until the earlier-queued interconnection request has completed the independent study process.

ii. At Distribution Provider's option, it may offer to study any Applicant that qualifies under this Section F.3.b under the Independent Study Process; provided that Applicant and Distribution Provider agree on a revised study timeline.

c. Transmission Cluster Study Process

If Applicant's Interconnection Request fails Screen Q or elects to be studied under the Transmission Cluster Study Process, Applicant shall have the option of applying for Interconnection under the Transmission Cluster Study Process of the Wholesale Distribution Access Tariff in accordance with its provisions. If Applicant fails Screen Q, Applicant's Interconnection Request shall be deemed withdrawn under this Rule regardless of whether Applicant applies for Interconnection under the WDAT.

An Applicant that chooses to apply under the Transmission Cluster Study Process of the WDAT must file a valid Interconnection Request and post the applicable study deposit as set out in Distribution Provider's WDAT. If Applicant chooses to apply under the WDAT, then Applicant's Interconnection Request will be subject to the terms of Distribution Provider's WDAT applicable to the Transmission Cluster Study Process, including those provisions establishing cost responsibility. Upon completion of the Transmission Cluster Study Process under the WDAT, Applicants that are eligible for a State-jurisdictional Interconnection can, in accordance with the WDAT, either execute the applicable Commission-approved Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities or the WDAT Generator Interconnection Agreement. Such Commission-approved Generator Interconnection Agreement for Exporting Generating Facilities will include the cost responsibility established in the Transmission Cluster Study.

If and when an Applicant submits a new interconnection request under the WDAT, Applicant is under the jurisdiction of FERC. On the date the applicable Commission-approved Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities is executed by Applicant, or Producer where those are different entities, and Distribution Provider, jurisdiction over the Interconnection reverts back to the Commission.

d. Independent Study Process

i) Scoping Meeting

Within five (5) Business Days after Distribution Provider notifies Applicant that the Generating Facility associated with its Interconnection Request has passed Screens Q and R and is thus eligible for the Independent Study Process, Distribution Provider shall contact Applicant to establish a date agreeable to Applicant and Distribution Provider for a scoping meeting.

The purpose of the scoping meeting shall be: (i) to discuss reasonable Commercial Operation Dates and alternative interconnection options; (ii) to exchange information, including any transmission data that would reasonably be expected to impact Applicant's interconnection options; (iii) to analyze such information; and (iv) to determine feasible Points of Interconnection and eliminate alternatives given resources and available information.

Distribution Provider will bring to the scoping meeting, as reasonably necessary to accomplish its purpose, such already available technical data, including, but not limited to; (i) general facility loadings, (ii) general instability issues, (iii) general short circuit issues, (iv) general voltage issues, and (v) general reliability issues.

Applicant will bring to the scoping meeting, in addition to the technical data in Attachment A of the Rule 21 Exporting Generating Facility Interconnection Request form, any system studies previously performed. Distribution Provider, the CAISO, if applicable, and Applicant will also bring to the meeting personnel and other resources as may be reasonably required to accomplish the purpose of the meeting in the time allocated for the meeting. On the basis of the meeting, Applicant shall designate its Point of Interconnection. The duration of the meeting shall be only what is sufficient to accomplish its purpose.

Within fifteen (15) Business Days after the scoping meeting, Distribution Provider shall provide Applicant with an Independent Study Process Study Agreement, which shall contain an outline of the scope of the Interconnection System Impact Study and Interconnection Facilities Study, contain a non-binding good faith estimate of the cost to perform such studies, and shall specify that Applicant is responsible for the actual cost of the Interconnection Studies, including reasonable administrative costs. Applicant shall execute and deliver to Distribution Provider the Independent Study Process Study Agreement no later than thirty (30) Business Days after the scoping meeting, or the Interconnection Request shall be deemed withdrawn.

ii) Timing of the Interconnection System Impact Study Results.

Absent extraordinary circumstances, Distribution Provider shall complete and issue a final Interconnection System Impact Study report within ninety (90) Calendar Days [PG&E: sixty (60) Business Days] after the execution of an Independent Study Process Study Agreement. If the System Impact Study indicates a need for Network Upgrades, Distribution Provider will share applicable study results with the CAISO for review and comment and will incorporate comments into the final Interconnection System Impact Study report.

At any time Distribution Provider determines that it will not meet the required time frame for completing the Interconnection System Impact Study, Distribution Provider shall notify Applicant as to the status of the Interconnection System Impact Study and provide an estimated completion date with an explanation of the reasons why additional time is required.

Upon request, Distribution Provider shall provide Applicant all relevant supporting documentation, workpapers and pre-Interconnection Request and post-Interconnection Request power flow, short circuit and stability databases, and currently planned Distribution Upgrades relevant to the Interconnection Request for the Interconnection System Impact Study. Applicant may be required to sign a non-disclosure agreement with terms consistent with Section D.7 regarding Confidentiality.

iii) Interconnection System Impact Study Results Meeting.

If requested by Applicant, a results meeting shall be held among Distribution Provider, the CAISO, if applicable, and Applicant to discuss the results of the Interconnection System Impact Study, including assigned cost responsibility. Within five (5) Business Days of such request, Distribution Provider shall contact Applicant to establish a date agreeable to Applicant, Distribution Provider and the CAISO, if applicable, for the results meeting.

iv) Initial Posting of Interconnection Financial Security.

Applicant shall make its initial posting of Interconnection Financial Security in accordance with the requirements of Section F.4.b, within sixty (60) Calendar Days after being provided with the final Interconnection System Impact Study report, or its Interconnection Request shall be deemed withdrawn. The initial posting of Interconnection Financial Security will be based on the cost responsibility for Network Upgrades, Distribution Upgrades, and Distribution Provider's Interconnection Facilities set forth in the final Interconnection System Impact Study report.

v) Modifications

At any time during the course of the Interconnection Studies, Applicant, Distribution Provider, or the CAISO, as applicable, may identify changes to the planned Interconnection that may improve the costs and benefits (including reliability) of the Interconnection, and the ability of the proposed change to accommodate the Interconnection Request. To the extent the identified changes are acceptable to Distribution Provider, the CAISO, as applicable, and Applicant, such acceptance not to be unreasonably withheld, Distribution Provider shall modify the Point of Interconnection and/or configuration in accordance with such changes without altering the Interconnection Request's eligibility for participating in Interconnection Studies.

At the Interconnection System Impact Study results meeting, Applicant should be prepared to discuss any desired modifications to the Interconnection Request. After the publication of the final Interconnection System Impact Study report, but no later than five (5) Business Days following the Interconnection System Impact Study results meeting, Applicant shall submit to Distribution Provider, in writing, modifications to any information provided in the Interconnection Request. Distribution Provider will forward Applicant's request for modification to the CAISO, if applicable, within two (2) Business Days of receipt. If no Interconnection System Impact Study results meeting is held, Applicant shall submit to Distribution Provider any requested modifications within twenty-five (25) Business Days of the receipt of the final Interconnection System Impact Study report.

Modifications permitted under this Section F.3.d.v shall include specifically: (a) a decrease in the electrical output (MW) of the proposed Generating Facility; (b) modifying the technical parameters associated with the Generating Facility technology or the Generating Facility step-up transformer impedance characteristics; and (c) modifying the interconnection configuration. Distribution Provider, in coordination with CAISO, if applicable, will evaluate whether the proposed modification to the interconnection request constitutes a Material Modification. Distribution Provider will inform Applicant in writing whether the modifications would constitute a Material Modification within 10 Business Days of receipt of the proposed request for modification. Any change to the Point of Interconnection, except for that specified by Distribution Provider in an Interconnection Study or otherwise allowed under this Section F.3.d.v, shall constitute a Material Modification.

If the proposed modification is determined to be a Material Modification, Applicant may either withdraw the proposed modification or proceed with a new Interconnection Request for such modification. Applicant shall make such determination within ten (10) Business Days after being provided the Material Modification determination results.

Proposed modifications determined not to be Material Modifications may still necessitate the need to re-evaluate the System Impact Study to determine modifications to the Interconnection Facilities and Distribution Upgrades. Distribution Provider will provide Applicant an estimate of time to complete the re-evaluation and the associated incremental cost required to complete the re-evaluation. Applicant may either accept the

additional time and cost to complete the re-evaluation, withdraw the proposed modification request, or proceed with a new Interconnection Request for such modification. Applicant shall make such determination within ten (10) Business Days after being provided the Material Modification results.

vi) Scope and Purpose of the Interconnection Facilities Study and Study Deposit.

Within either (i) five (5) Business Days following the results meeting, or (ii) within twenty-five (25) Business Days of the receipt of the final Interconnection System Impact Study report if no Interconnection System Impact Study results meeting is held, Applicant shall submit to Distribution Provider the data required by Distribution Provider. At that time, for Generating Facilities 5 MW or less, Applicant shall also submit the Facilities Study deposit, as set out in Section E.3.a, unless the Facilities Study will be waived in accordance with Section F.3.d.vii.

vii) Waiver of the Interconnection Facilities Study.

The Facilities Study may be waived if Distribution Provider and Applicant mutually agree to such waiver. Within thirty (30) Calendar Days after Distribution Provider provides the final Interconnection System Impact Study report to Applicant (if the Interconnection Facilities Study is waived), Distribution Provider shall tender a draft Generator Interconnection Agreement, together with draft appendices. Refer to Section F.3.e for cost responsibility and time frames for completing the Generator Interconnection Agreement. If Applicant chooses to forgo the Facilities Study and move directly to a Generator Interconnection Agreement, Applicant must agree in writing to be responsible for all actual costs of all required facilities deemed necessary by Distribution Provider. Applicant is responsible for all costs associated with Parallel Operation to support the safe and reliable operation of the Distribution and Transmission System as set forth in Section E.4. Refer to Section F.3.e for cost responsibility and time frames for completing the Generator Interconnection Agreement.

viii) Timing of the Interconnection Facilities Study.

The Interconnection Facilities Study shall be completed and provided to Applicant within ninety (90) Calendar Days [PG&E: sixty (60) Business Days] after Applicant posts the initial Interconnection Financial Security in accordance with Section F.4.b where Distribution Upgrades or Network Upgrades are identified and, for Generating Facilities with a Gross Nameplate Rating of 5 MW or less, Applicant submits the Facilities Study deposit in accordance with Section E.3.a and F.3.d.vi. In cases where no Distribution Upgrades and/or Network Upgrades are identified and the required facilities are limited to Distribution Provider's Interconnection Facilities only, the

Interconnection Facilities Study shall be completed within sixty (60) Calendar Days [PG&E: forty-five (45) Business Days] after Applicant posts the initial Interconnection Financial Security and, for Generating Facilities with a Gross Nameplate Rating of 5 MW or less, Applicant submits the Facilities Study deposit.

If applicable, Distribution Provider will share the applicable study results with the CAISO for review and comment, and will incorporate CAISO comments, if any, into the study report prior to issuing a final Interconnection Facilities Study report to Applicant.

Within thirty (30) Calendar Days after Distribution Provider provides the final Interconnection Facilities Study report to Applicant, or within thirty (30) Calendar Days of an Interconnection Facilities Study results meeting, if requested, Distribution Provider shall tender a draft Generator Interconnection Agreement, together with draft appendices, unless Applicant requests an Interconnection Facilities Study results meeting. Refer to Section F.3.e for cost responsibility and time frames for completing the Generator Interconnection Agreement.

At any time Distribution Provider determines that it will not meet the required time frame for completing the Interconnection Facilities Study, Distribution Provider shall notify Applicant in writing as to the status of the Interconnection Facilities Study and provide an estimated completion date with an explanation of the reasons why additional time is required.

ix) Interconnection Facilities Study Results Meeting.

If requested by Applicant, a results meeting shall be held among Distribution Provider, the CAISO, if applicable, and Applicant to discuss the results of the Interconnection Facilities Study, including assigned cost responsibility. Within five (5) Business Days of the request, Distribution Provider shall contact Applicant to establish a date agreeable to Applicant, Distribution Provider and the CAISO, if applicable, for the results meeting. Within thirty (30) Calendar Days after the Interconnection Facilities Study results meeting, Distribution Provider shall tender a draft Generator Interconnection Agreement, together with draft appendices, to Applicant. Refer to Section F.3.e for cost responsibility and time frames for completing the Generator Interconnection Agreement.

x) Second and Third Postings of Interconnection Financial Security

Applicant will post its second and third postings of Interconnection Financial Security as set forth in Sections F.4.c and F.4.d based on the cost responsibility for Network Upgrades, Distribution Upgrades, and Distribution Provider's Interconnection Facilities set forth in the final Interconnection Facilities Study, or the final Interconnection System Impact Study if the Interconnection Facilities Study is waived in accordance with Section F.3.d.vii.

e. Generator Interconnection Agreement

i) Tender

Within thirty (30) Calendar Days after the later of i) Distribution Provider provides the final Interconnection Facilities Study report (or final Interconnection System Impact Study report if the Interconnection Facilities Study is waived) to Applicant, or ii) the Interconnection Facilities Study results meeting, Distribution Provider shall tender a draft Generator Interconnection Agreement, together with draft appendices. Applicant shall provide written comments, or notification of no comments, to the draft appendices within thirty (30) Calendar Days.

ii) Negotiation

Notwithstanding Section F.3.e.i, at the request of Applicant, Distribution Provider shall begin negotiations with Applicant concerning the appendices to the Generator Interconnection Agreement at any time after Distribution Provider provides Applicant with the final Interconnection Facilities Study report (or final Interconnection System Impact Study report if the Interconnection Facilities Study is waived). Distribution Provider and Applicant shall negotiate concerning any disputed provisions of the appendices to the draft Generator Interconnection Agreement for not more than ninety (90) Calendar Days after Distribution Provider provides Applicant with the final Interconnection Facilities Study report (or final Interconnection System Impact Study report if the Interconnection Facilities Study is waived). Producer is responsible for all costs associated with Parallel Operation to support the safe and reliable operation of the Distribution System and Transmission System as set forth in Section E.4.

If Applicant determines that negotiations are at an impasse, it may request termination of the negotiations at any time after tender of the draft Generator Interconnection Agreement pursuant to Section F.3.e.i and initiate Dispute Resolution procedures pursuant to Section K. Unless otherwise agreed by the Parties, if Applicant or Producer, where those are different entities, has not executed the Generator Interconnection Agreement, or initiated Dispute Resolution procedures pursuant to Section K, within ninety (90) Calendar Days after issuance of the final Interconnection Facilities Study report (or final Interconnection System Impact Study report if the Interconnection Facilities Study is waived), it shall be deemed to have withdrawn its Interconnection Request. Distribution Provider shall provide to Producer a final Generator Interconnection Agreement within fifteen (15) Business Days after the completion of the negotiation process.

iii) Extensions of Commercial Operation Date.

Extensions of the Commercial Operation Date will be agreed upon in the executed Generator Interconnection Agreement. Reasonable Commercial Operation Dates will be discussed at the Interconnection Facilities Study results meeting or the System Impact Study results meeting if the Facilities Study is waived. Interconnection Requests under the Independent Study Process will not be granted extensions except in circumstances beyond the control of Producer. This provision has no impact on any power purchase agreement terms.

f. Engineering & Procurement (E&P) Agreement

Prior to executing a Generator Interconnection Agreement, in order to advance the implementation of its interconnection an Applicant may request, and Distribution Provider shall offer, an E&P Agreement that authorizes Distribution Provider to begin engineering and procurement of long lead-time items necessary for the establishment of the interconnection. However, Distribution Provider shall not be obligated to offer an E&P Agreement if Applicant is in Dispute Resolution as a result of an allegation that Applicant has failed to meet any milestones or comply with any prerequisites specified in other parts of this Rule. The E&P Agreement is an optional procedure. The E&P Agreement shall provide for Applicant to pay the cost of all activities authorized by Applicant and to make advance payments or provide other satisfactory security for such costs.

Applicant shall pay the cost of such authorized activities and any cancellation costs for equipment that is already ordered for its interconnection, which cannot be mitigated as hereafter described, whether or not such items or equipment later become unnecessary. If Applicant withdraws its Interconnection Request, or either Applicant or Distribution Provider terminates the E&P Agreement, to the extent the equipment ordered can be canceled under reasonable terms, Applicant shall be obligated to pay the associated cancellation costs. To the extent that the equipment cannot be reasonably canceled, Distribution Provider may elect: (i) to take title to the equipment, in which event Distribution Provider shall refund Applicant any amounts paid by Applicant for such equipment and shall pay the cost of delivery of such equipment, or (ii) to transfer title to and deliver such equipment to Applicant, in which event Applicant shall pay any unpaid balance and cost of delivery of such equipment.

4. Interconnection Financial Security

a. Types of Interconnection Financial Security.

The Interconnection Financial Security posted by an Applicant may be any combination of the following types of Interconnection Financial Security provided in favor of Distribution Provider:

(a) an irrevocable and unconditional letter of credit issued by a bank or financial institution that has a credit rating of A or better by Standard and Poor's or A2 or better by Moody's;

(b) an unconditional and irrevocable guaranty issued by a company has a credit rating of A or better by Standard and Poor's or A2 or better by Moody's;

(c) a cash deposit standing to the credit of Distribution Provider and in an interest-bearing escrow account maintained at a bank or financial institution that is reasonably acceptable to Distribution Provider;

Interconnection Financial Security instruments as listed above shall be in such form as Distribution Provider may reasonably require from time to time by notice to Applicants, or in such other form as has been evaluated and approved as reasonably acceptable by Distribution Provider.

Distribution Provider shall require the use of standardized forms of Interconnection Financial Security to the greatest extent possible. If at any time the guarantor of the Interconnection Financial Security fails to maintain the credit rating required by this Section F.4.a, Applicant shall provide to Distribution Provider replacement Interconnection Financial Security meeting the requirements of this Section F.4.a within five (5) Business Days of the change in credit rating.

Interest on a cash deposit standing to the credit of Distribution Provider in an interest-bearing escrow account under subpart (d) of this Section F.4.a will accrue to Applicant's benefit.

b. Initial Posting of Interconnection Financial Security

On or before sixty (60) Calendar Days after publication of the final Interconnection System Impact Study report, Applicant must post, with notice to Distribution Provider, two separate Interconnection Financial Security instruments.

First, Applicant proposing to interconnect a Large Generating Facility shall post an Interconnection Financial Security instrument in an amount equal to the lesser of (i) fifteen percent (15%) of the total cost responsibility assigned to Applicant in the final Interconnection System Impact Study for Network Upgrades, (ii) $20,000 per MW of electrical output of the Large Generating Facility or the amount of megawatt increase in the generating capacity of each existing Generating Facility as listed by Applicant in its

Interconnection Request, including any requested modifications thereto, or (iii) $7,500,000.

Applicant proposing to interconnect a Small Generating Facility shall post an Interconnection Financial Security instrument in an amount equal to the lesser of (i) fifteen percent (15%) of the total cost responsibility assigned to Applicant in the final Interconnection System Impact Study for Network Upgrades, or (ii) $20,000 per megawatt of electrical output of the Small Generating Facility or the amount of MW increase in the generating capacity of each existing Generating Facility as listed by Applicant in its Interconnection Request.

Second, Applicant shall also post an Interconnection Financial Security instrument in the amount of twenty percent (20%) of the total estimated cost responsibility assigned to Applicant in the final Interconnection System Impact Study for Distribution Provider's Interconnection Facilities and Distribution Upgrades.

The failure by an Applicant to timely post the Interconnection Financial Security required by this Section F.4.b shall result in the Interconnection Request being deemed withdrawn subject to Section F.6.

Applicant shall provide Distribution Provider with written notice that it has posted the required Interconnection Financial Security no later than the applicable final day for posting.

c. Second Posting of Interconnection Financial Security

On or before one hundred twenty (120) Calendar Days after publication of the final Interconnection Facilities Study report (or final Interconnection System Impact Study report if the Interconnection Facilities Study is waived), Applicant shall post two separate Interconnection Financial Security instruments.

First, Applicant proposing to interconnect a Large Generating Facility shall post an Interconnection Financial Security instrument such that the total Interconnection Financial Security posted by Applicant for Network Upgrades equals the lesser of (i) $15 million, or (ii) thirty percent (30%) of the total cost responsibility assigned to Applicant for Network Upgrades in either the final Interconnection System Impact Study or final Interconnection Facilities Study, whichever is lower.

Applicant proposing to interconnect a Small Generating Facility shall post an Interconnection Financial Security instrument such that the total Interconnection Financial Security posted by Applicant for Network Upgrades equals the lesser of (i) $1 million, or (ii) thirty percent (30%) of the total cost responsibility assigned to Applicant for Network Upgrades in either the final Interconnection System Impact Study or final Interconnection Facilities Study, whichever is lower.

Second, Applicant shall also post an Interconnection Financial Security instrument such that the total Interconnection Financial Security posted by Applicant for Distribution Provider's Interconnection Facilities and Distribution Upgrades equals thirty percent (30%) of the total cost responsibility assigned to Applicant in the final Interconnection Facilities Study, or final Interconnection System Impact Study if the Interconnection Facilities Study is waived, for Distribution Provider's Interconnection Facilities and Distribution Upgrades.

If the start date for Construction Activities of Network Upgrades, Distribution Provider's Interconnection Facilities and Distribution Upgrades on behalf of Applicant is prior to one hundred twenty (120) Calendar Days after publication of the final Interconnection Facilities Study report (or final Interconnection System Impact Study report if the Interconnection Facilities Study is waived), that start date must be set forth in Applicant's Generator Interconnection Agreement and Applicant shall make its second posting of Interconnection Financial Security pursuant to Section F.4.d rather than Section F.4.c.

The failure by an Applicant to timely post the Interconnection Financial Security required by this Section F.4.c shall result in the Interconnection Request being deemed withdrawn and subject to Section F.6 or, if applicable, shall constitute grounds for termination of the Generator Interconnection Agreement.

d. Third Posting of Interconnection Financial Security.

On or before the start of Construction Activities for Network Upgrades or Distribution Provider's Interconnection Facilities or Distribution Upgrades on behalf of Applicant, whichever is earlier, Applicant shall modify the two separate Interconnection Financial Security instruments posted as follows.

With respect to the Interconnection Financial Security instrument for Network Upgrades, Applicant shall modify this instrument so that it equals one hundred percent (100%) of the total cost responsibility assigned to Applicant for Network Upgrades in the final Interconnection Facilities Study, or the final Interconnection System Impact Study if the Interconnection Facilities Study is waived.

With respect to the Interconnection Financial Security instrument for Distribution Provider's Interconnection Facilities or Distribution Upgrades, Applicant shall modify this instrument so that it equals one hundred percent (100%) of the total cost responsibility assigned to Applicant for Distribution Provider's Interconnection Facilities in the final Interconnection Facilities Study, or the final Interconnection System Impact Study if the Interconnection Facilities Study is waived.

The failure by an Applicant to timely post the Interconnection Financial Security required by this Section F.4.d shall constitute grounds for termination of the Generator Interconnection Agreement.

e. General Effect of Withdrawal of Interconnection Request or Termination of the Generator Interconnection Agreement on Interconnection Financial Security.

Except as set forth in Section F.4.e.i, withdrawal of an Interconnection Request or termination of a Generator Interconnection Agreement shall allow Distribution Provider to liquidate the Interconnection Financial Security, or balance thereof, posted by Applicant for Network Upgrades at the time of withdrawal. To the extent the amount of the liquidated Interconnection Financial Security plus capital, if any, separately provided by Applicant to satisfy its obligation to finance Network Upgrades in accordance with Section E.4 exceeds the total cost responsibility for Network Upgrades assigned to Applicant by the final Interconnection Facilities Study, or the final Interconnection System Impact Study if the Interconnection Facilities Study is waived, Distribution Provider shall remit to Applicant the excess amount.

Withdrawal of an Interconnection Request or termination of a Generator Interconnection Agreement shall result in the release to Applicant of any Interconnection Financial Security posted by Applicant for Distribution Provider's Interconnection Facilities and Distribution Upgrades, except with respect to any amounts necessary to pay for costs incurred or irrevocably committed by Distribution Provider on behalf of Applicant for Distribution Provider's Interconnection Facilities and Distribution Upgrades and for which Distribution Provider has not been reimbursed.

i) Conditions for Partial Recovery of Interconnection Financial Security Upon Withdrawal of Interconnection Request or Termination of Generator Interconnection Agreement.

A portion of the Interconnection Financial Security shall be released to Applicant, consistent with Section F.4.e.ii, if the withdrawal of the Interconnection Request or termination of the Generator Interconnection Agreement occurs for any of the following reasons:

(1) Failure to Secure a Power Purchase Agreement.

At the time of withdrawal of the Interconnection Request or termination of the Generator Interconnection Agreement, Applicant demonstrates to Distribution Provider that it has failed to secure an acceptable power purchase agreement for the Energy or

capacity of the Generating Facility after a good faith effort to do so. A good faith effort can be established by demonstrating participation in a competitive solicitation process or bilateral negotiations with an entity other than an Affiliate that progressed, at minimum, to the mutual exchange by all counter-parties of proposed term sheets.

(2) Failure to Secure a Necessary Permit.

At the time of withdrawal of the Interconnection Request or termination of the Generator Interconnection Agreement, Applicant demonstrates to Distribution Provider that it has received a final denial from the primary issuing Governmental Authority of any permit or other authorization necessary for the construction or operation of the Generating Facility.

(3) Increase in the Cost of Distribution Provider's Interconnection Facilities or Distribution Upgrades.

Applicant withdraws the Interconnection Request or terminates the Generator Interconnection Agreement based on an increase of: (i) more than 30% or $300,000, whichever is greater, in the estimated cost of Distribution Provider's Interconnection Facilities; or (ii) more than 30% or $300,000, whichever is greater, in the estimated cost of Distribution Upgrades allocated to Applicant from the Interconnection System Impact Study to the Interconnection Facilities Study. This Section F.4.e.i.(3) shall not apply if the cause of the cost increase under (i) or (ii) above is the result of a change requested by Applicant pursuant to Section F.3.d.v.

(4) Material Change in Applicant's Interconnection Facilities Created by Distribution Provider's Change in the Point of Interconnection.

Applicant withdraws the Interconnection Request or terminates the Generator Interconnection Agreement based on a material change from the Interconnection System Impact Study in the Point of Interconnection for the Generating Facility mandated by Distribution Provider and included in the final Interconnection Facilities Study. A material change in the Point of Interconnection shall be where the Point of Interconnection has moved to (i) a different substation, (ii) a different line on a different right of way, or (iii) a materially different location than previously identified on the same line.

ii) Schedule for Determining Non-Refundable Portion of the Interconnection Financial Security for Network Upgrades.

(1) Up to One Hundred Twenty Days (120) After the Final Interconnection Facilities Study Report (or Final Interconnection System Impact Study Report if the Interconnection Facilities Study is Waived).

If, at any time after the initial posting of the Interconnection Financial Security for Network Upgrades under Section F.4.b and on or before one hundred twenty (120) Calendar Days after the date of issuance of the final Interconnection Facilities Study report (or final Interconnection System Impact Study report if the Interconnection Facilities Study is waived), Applicant withdraws the Interconnection Request or terminates the Generator Interconnection Agreement, as applicable, in accordance with Section F.4.e.i, Distribution Provider shall liquidate the Interconnection Financial Security for Network Upgrades under Section F.4.b and reimburse Applicant in an amount of (i) any posted amount less fifty percent (50%) of the value of the posted Interconnection Financial Security for Network Upgrades (with a maximum of $10,000 per requested and approved MW value of the Generating Facility Capacity at the time of withdrawal being retained by Distribution Provider), or (ii) if the Interconnection Financial Security has been drawn down to finance Pre-Construction Activities for Network Upgrades on behalf of Applicant, the lesser of the remaining balance of the Interconnection Financial Security or the amount calculated under (i) above. If Applicant has separately provided capital apart from the Interconnection Financial Security to finance Pre-Construction Activities for Network Upgrades, Distribution Provider will credit the capital provided as if drawn from the Interconnection Financial Security and apply (ii) above.

(2) Between One Hundred Twenty-One (121) Calendar Days and After Final Interconnection Facilities Study Report and the Commencement of Construction Activities.

If, at any time between one hundred twenty-one (121) Calendar Days and after the date of issuance of the final Interconnection Facilities Study report (or final Interconnection System Impact Study report if the Interconnection Facilities Study is waived), and the commencement of Construction Activities for either Network Upgrades or Distribution Provider's Interconnection Facilities or Distribution Upgrades, Applicant withdraws the Interconnection Request or terminates the Generator Interconnection Agreement, as applicable, in accordance with Section F.4.e.i, Distribution Provider shall liquidate the Interconnection Financial Security for Network Upgrades under Section F.4.c and reimburse Applicant in an amount of (i) any posted amounts less fifty percent (50%) of the value of the posted Interconnection Financial Security for Network Upgrades (with a maximum of $20,000 per requested and approved MW value of the Generating Facility Capacity at the time of withdrawal being retained by Distribution Provider), or, (ii) if the Interconnection Financial Security has been drawn down to finance Pre-Construction Activities for Network Upgrades on behalf of Applicant, the lesser of the remaining balance of the Interconnection Financial Security or the amount calculated under (i) above. If Applicant has separately provided capital apart from the

Interconnection Financial Security to finance Pre-Construction Activities for Network Upgrades, Distribution Provider will credit the capital provided as if drawn from the Interconnection Financial Security and apply (ii) above.

(3) After Commencement of Construction Activities.

Once Construction Activities on Network Upgrades on behalf of Applicant commence, any withdrawal of the Interconnection Request or termination of the Generator Interconnection Agreement by Applicant will be treated in accordance with this Section F.4.e.

(4) Notification and Accounting by Distribution Provider.

Distribution Provider will notify Applicant within three (3) Business Days of liquidating any Interconnection Financial Security. Within seventy-five (75) Calendar Days of any liquidating event, Distribution Provider will provide Applicant with an accounting of the disposition of the proceeds of the liquidated Interconnection Financial Security and all proceeds not otherwise reimbursed to Applicant or applied to costs incurred or irrevocably committed by Distribution Provider on behalf of Applicant in accordance with this Section F.4.e shall be applied as directed by the Commission. Where an Applicant with remaining proceeds from Interconnection Financial Security cannot be located, such remaining proceeds shall escheat to the State pursuant to the Unclaimed Property Law commencing with the California Code of Civil Procedure § 1500.

5. Commissioning Testing and Parallel Operation

a. Commissioning Testing

Producer Arranges for and Completes Commissioning Testing of Generating Facility and Producer's Interconnection Facilities: Producer is responsible for testing new Generating Facilities and associated Interconnection Facilities according to Section L.5 to ensure compliance with the safety and reliability provisions of this Rule prior to being operated in parallel with Distribution Provider's Distribution or Transmission System. For non-Certified Equipment, Producer shall develop a written testing plan to be submitted to Distribution Provider for its review and acceptance. Alternatively, Producer and Distribution Provider may agree to have Distribution Provider conduct the required testing at Producer's expense. Where applicable, the test plan shall include the installation test procedures published by the manufacturer of the Generating Facility or Interconnection Facilities. Facility testing shall be conducted at a mutually agreeable time, and depending on who conducts the test, Distribution Provider or Producer shall be given the opportunity to witness the tests.

b. Parallel Operation or Momentary Parallel Operation

Producer shall not commence Parallel Operation of its Generating Facility with Distribution Provider's system unless it has received Distribution Provider's express

written permission to do so. Distribution Provider shall authorize Producer's Generating Facility for Parallel Operation or Momentary Parallel Operation with Distribution Provider's Distribution or Transmission System, in writing, within five (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 Producer and Distribution Provider.

6. Withdrawal

Applicant may withdraw its Interconnection Request at any time by written notice of such withdrawal to Distribution Provider. In addition, after receipt of the Interconnection Request, if Applicant fails to adhere to the requirements and timelines of this tariff, except as provided in Section K (Disputes), Distribution Provider shall deem the Interconnection Request to be withdrawn and shall provide written notice to Applicant of the deemed withdrawal within five (5) Business Days and an explanation of the reasons for such deemed withdrawal. Upon receipt of such written notice, Applicant shall have five (5) Business Days in which to either respond with information or action that either cures the deficiency or supports its position that the deemed withdrawal was erroneous and notifies Distribution Provider of its intent to pursue Dispute Resolution. If Applicant cures the deficiency or supports its position that the deemed withdrawal was erroneous, Applicant shall not lose its queue position established pursuant to Section E.5.

Withdrawal shall result in the removal of the Interconnection Request from the Interconnection Study process. If Applicant disputes the withdrawal and removal from the Interconnection Study process and has elected to pursue Dispute Resolution as set forth in Section K, Applicant's Interconnection Request will not be considered in any ongoing Interconnection Study during the Dispute Resolution process.

In the event of such withdrawal, Distribution Provider, subject to the provisions in Section D.7 and Sections E.3.a, as applicable, shall provide, at Applicant's request, all information that Distribution Provider developed for any completed study conducted up to the date of withdrawal of the Interconnection Request.

G. Engineering Review Details

Interconnection Technical Framework Overview
Complete/Valid Interconnection Request
Does the Applicant choose to go directly to Detailed Studies?
No
Yes
Go to Electrical Independence Tests and Detailed Studies
Non Export/Net Energy Metering (NEM) or Export?
Export
Non Export / Net Energy Metering
Fast Track Eligibility MW Limit
Fail
Pass
Initial Review Screens A- H
Networked Secondary A
Certified Equipment B
Voltage Drop C
Transformer Rating D
Single Phase Generator E
Short Circuit Current Contribution F
Short Circuit Interrupting Capability G
Line Configuration H
Pass All Screens
Fail Any Screen
Does quick review of failed screens determine requirements to address the screens?
Yes
No
Initial Review Screens I- M
Will power be exported across the PCC? I
No
Yes
Generating Facility ≤ 11kVA? J
Yes
No
Is Generating Facility a NEM project whose nameplate capacity is ≤ 500kW? K
Fail
No
Yes
T. Dependency / Stability Test L
Fail
Pass
Aggregate generation ≤ 15% of line section peak load? M
No
Yes
Supplemental Review (SR)
Penetration Test N
Power Quality & Voltage Fluctuation O
Safety and Reliability Test P
Pass All
Fail Any Test
Are requirements determined without further study?
Yes
No
Proceed with interconnection subject to requirements determined by Initial Review or SR, if any
Go to Electrical Independence Tests and Detailed Studies

Interconnection Technical Framework- Overview

1. *Initial Review Screens*

The Initial Review consists of Screens A through M. If any of the Screens A through H are not passed, a quick review of the failed Screen(s) may determine the requirements to address the failure(s). Otherwise, Supplemental Review is required.

Some examples of solutions that may be available to mitigate the impact of a failed Screen A through H are:

1. Replace an overloaded distribution transformer with a larger transformer.
2. Replace overloaded secondary conductors with larger conductor.
3. Determine if phase balancing on the transformer is possible with minimal review.
4. If possible without further study check if the Generating Facility will actually overstress equipment.

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

- If Yes (fail), must go to Supplemental Review except if the Generating Facility is on a Spot Network and meets the following criteria. If the Generating Facility meets the following criteria, continue to Screen B pursuant to Section G.1.a.

The proposed Generating Facility must utilize an inverter-based equipment package and, together with the aggregated other inverter-based generation, shall not exceed the smaller of 5 % of a Spot Network's maximum load or 50 kW. Under no condition shall the interconnection of a Generating Facility result in a backfeed of a Spot Network or cause unnecessary operation of any Spot Network protectors.

- If No (pass), continue to Screen B.

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

b. Screen B: Is Certified Equipment used?

Does the Interconnection Request propose to use Certified Equipment as set out in Section L or does the equipment have interim Distribution Provider approval?

- If Yes (pass), continue to Screen C.
- If No (fail) continue to Screen C pursuant to Section G.1.a.

Interim approval allows Distribution Provider 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 Distribution Provider'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 Distribution Provider, Distribution Provider 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 ensure that the Protective Functions are working properly.

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

c. Screen C: Is the Starting Voltage Drop within acceptable limits?

- If Yes (pass), continue to Screen D.
- If No (fail), continue to Screen D pursuant to Section G.1.a

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

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

Option 1: Distribution Provider 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: Distribution Provider 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, Distribution Provider may use tables or nomographs to determine the voltage drop. Voltage drops caused by starting a Generator must be less than 2.5% for primary Interconnections and 5% for secondary Interconnections.

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 Distribution Provider Customers.

3. Passing this Screen does not relieve Producer from ensuring that its Generating Facility complies with the flicker requirements of this Rule, Section H.2.d.

d. Screen D: Is the transformer or secondary conductor rating exceeded?

Do the maximum aggregated Gross Ratings for all the Generating Facilities connected to a secondary distribution transformer exceed the transformer or secondary conductor rating, modified per established Distribution Provider practice, absent any customer generators?

- If Yes (fail), continue to Screen E pursuant to Section G.1.a.
- If No (pass), continue to screen E.

Significance: This screen addresses potential secondary transformer or secondary conductor overloads. When Distribution Provider's analysis determines a transformer or conductor, change is required, Distribution Provider will furnish Applicant with an explanation of why the change is needed.

e. Screen E: Does the Single-Phase Generator cause unacceptable imbalance?

If the proposed Generating Facility is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, does it cause unacceptable imbalance between the two phases of the 240 volt service?

- If Yes (fail), continue to Screen F pursuant to Section G.1.a.
- If No (pass), continue to screen F.

Significance: Generating Facilities connected to a single-phase transformer with 120/240 V secondary voltage must be installed such that the aggregated gross output is as balanced as practicable between the two phases of the 240 volt service. When Distribution Provider's analysis determines a transformer change is required. Distribution Provider will furnish the customer with an explanation of why the change is needed.

f. Screen F: Is the Short Circuit Current Contribution Ratio within acceptable limits?

- If Yes (pass), continue to Screen G.
- If No (fail), continue to Screen G pursuant to Section G.1.a.

Note: This Screen does not apply to Generating Facilities with a Gross Rating of 11 kVA or less.

The Short Circuit Current Contribution Ratio Screen:

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 Distribution Provider's Distribution System circuit that serves the Generating Facility must be less than or equal to 0.1.

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

g. Screen G: Is the Short Circuit Interrupting Capability Exceeded?

Does the proposed Generating Facility, in aggregate with other generation on the distribution circuit, cause any distribution protective devices and equipment (including, but not limited to, substation breakers, fuse cutouts, and line reclosers), or Interconnection Request equipment on the system to exceed 87.5 % of the short circuit

interrupting capability; or is the Interconnection proposed for a circuit that already exceeds 87.5 % of the short circuit interrupting capability?

- If Yes (fail) continue to Screen H pursuant to Section G.1.a.
- If No (pass), continue to Screen H

Note: This Screen does not apply to Generating Facilities with a Gross Rating of 11 kVA or less.

Significance: If the Generating Facility passes this screen, it can be expected that it will not cause any of Distribution Provider's equipment to be overstressed.

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

- If Yes (pass), continue to Screen I.
- If No (fail), continue to Screen I pursuant to Section G.1.a.

Note: This Screen does not apply to Generating Facilities with a Gross Rating of 11 kVA or less

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 G.1 if the proposed Generating Facility passes the Screen.

Table G-1
Type of Interconnection

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 Distribution Provider's, or other Customer's equipment caused by loss of system neutral grounding during the operating time of the Non-Islanding Protective Function.

i. Screen I: Will power be exported across the PCC?

- If Yes, Continue to Screen J.
- If No, then to ensure that the Generating Facility does not export across the PCC, the Generating Facility must incorporate one of the following five options. Following that selection, Initial Review is complete.

Option 1 ("Reverse Power Protection"): To ensure power is never exported across the PCC, a reverse power Protective Function may be provided. The default setting for this Protective Function 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 J.8.

Option 2 ("Minimum Power Protection"): To ensure 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 shall be 5% (import) of Generating Facility's total Gross Rating, with a maximum 2.0 second time delay.

Option 3 (Certified Non-Islanding Protection): To ensure the incidental export of power is limited to acceptable levels, this option requires that all of the following conditions be met: a) the total Gross Capacity of the Generating Facility must be no more than 25% of the nominal ampere rating of Producer's service equipment; b) the total Gross Capacity of the Generating Facility must be no more than 50% of 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 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 ensure that power will not be exported to Distribution Provider's Distribution or Transmission System. This option requires the Generating Facility capacity to be no greater than 50% of Producer's verifiable minimum Host Load over the past 12 months.

Option 5: Inadvertent Export as described in Appendix One.

Significance:

1. If it can be assured that the Generating Facility will not export power, Distribution Provider's Distribution or Transmission System does not need to be studied

for load-carrying capability or Generating Facility power flow effects on Distribution Provider 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 interconnection through the Fast Track process without implementing reverse power or minimum power Protective Functions (Option 3).

j. Screen J: Is the Gross Rating of the Generating Facility 11 kVA or less?

- If Yes (pass), skip Screens K, L. and M and Initial Review is complete.
- If No (fail), continue to Screen K.

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

k. Screen K: Is the Generating Facility a Net Energy Metering (NEM) Generating Facility with nameplate capacity less than or equal to 500kW?

- If Yes (pass), skip screen L and continue to screen M.
- If No (fail), continue to screen L.

Significance: The purpose of this Screen is solely to facilitate interconnection of NEM facilities below this size threshold by allowing such facilities to bypass Screen M. The use of nameplate capacity expedites the Initial Review analysis. In Supplemental Review, the net export will be analyzed.

l. Screen L: Transmission Dependency and Transmission Stability Test

Is the Interconnection Request for an area where: (i) there are known, or posted, transient stability limitations, or (ii) the proposed Generating Facility has interdependencies, known to Distribution Provider, with earlier queued Transmission System interconnection requests. Where (i) or (ii) above are met, the impacts of this Interconnection Request to the Transmission System may require Detailed Study.

- If Yes (fail), Supplemental Review is required.
- If No (pass), continue to Screen M.

Significance: Special consideration must be given to those areas identified as having current or future (due to currently queued interconnection requests) grid stability concerns.

m. Screen M: Is the aggregate Generating Facility capacity on the Line Section less than 15% of Line Section peak load for all line sections bounded by automatic sectionalizing devices?

- If Yes (pass), Initial Review is complete.
- If No (fail), Supplemental Review is required.

Significance:

1. Low penetration of Generating Facility installations will have a minimal impact on the operation and load restoration efforts of Distribution Provider's Distribution System.

2. The operating requirements for a high penetration of Generating Facilities may be different since the impact on Distribution Provider's Distribution System will no longer be minimal, therefore requiring additional study or controls.

The purpose of this Screen is solely to identify if the Generating Facility needs additional study and is not intended as justification for limiting the penetration of generation on a line section.

2. *Supplemental Review Screens*

The Supplemental Review consists of Screens N through P. If any of the Screens are not passed, a quick review of the failed Screen(s) will determine the requirements to address the failure(s) or that Detailed Studies are required. In certain instances, Distribution Provider may be able to identify the necessary solution and determine that Detailed Studies are unnecessary. Some examples of solutions that may be available to mitigate the impact of a failed Screen are:

1. Replacing a fixed capacitor bank with a switched capacitor bank.

2. Adjustment of line regulation settings.

3. Simple reconfiguration of the distribution circuit.

a. Screen N: Penetration Test

Where 12 months of line section minimum load data is available, can be calculated, can be estimated from existing data, or determined from a power flow model, is the aggregate Generating Facility capacity on the Line Section less than 100% of the minimum load for all line sections bounded by automatic sectionalizing devices upstream of the Generating Facility?

- If yes (pass), continue to Screen O.

- If no (fail), a quick review of the failure may determine the requirements to address the failure; otherwise Electrical Independence Tests and Detailed Studies are required. Continue to Screen O. (Note: If Electrical Independence tests and Detailed Studies are required, Applicants will continue to the Electrical Independence Tests and Detailed Studies after review of the remaining Supplemental Review Screens.)

Note 1: If none of the above options are available, this screen defaults to Screen N.

Note 2: The type of generation will be taken into account when calculating, estimating, or determining circuit or Line Section minimum load relevant for the application of this screen. Solar generation systems with no battery storage use daytime minimum load (i.e. 10 am to 4 pm for fixed panel systems and 8 am to 6 pm for PV systems utilizing tracking systems), while all other generation uses absolute minimum load.

Note 3: When this screen is being applied to a NEM Generating Facility, the net export in kW, if known, that may flow across the Point of Common Coupling into Distribution Provider's Distribution System will be considered as part of the aggregate generation.

Note 4: Distribution Provider will not consider as part of the aggregate generation for purposes of this screen Generating Facility capacity known to be already reflected in the minimum load data.

Note 5: NEM Generating Facilities with net export less than or equal to 500 kW that may flow across the Point of Common Coupling into Distribution Provider's Distribution or Transmission System will not be studied in the Transmission Cluster Study Process, but may be studied under the Independent Study Process.

Significance: Penetration of Generating Facility installations that does not result in power flow from the circuit back toward the substation will have a minimal impact on equipment loading, operation, and protection of the Distribution System.

b. Screen O: Power Quality and Voltage Tests

In aggregate with existing generation on the line section,

a) Can it be determined within the Supplemental Review that the voltage regulation on the line section can be maintained in compliance with Commission Rule 2 and/or Conservation Voltage Regulation voltage requirements under all system conditions?

b) Can it be determined within the Supplemental Review that the voltage fluctuation is within acceptable limits as defined by IEEE 1453 or utility practice similar to IEEE1453?

c) Can it be determined within the Supplemental Review that the harmonic levels meet IEEE 519 limits at the Point of Common Coupling (PCC)?

- If yes to all of the above (pass), continue to Screen P.
- If no to any of the above (fail), a quick review of the failure may determine the requirements to address the failure; otherwise Electrical Independence Tests and Detailed Studies are required. Continue to Screen P. (Note: If Electrical Independence tests and Detailed Studies are required, Applicants will continue to the Electrical Independence Tests and Detailed Studies after review of the remaining Supplemental Review Screens.)

Significance: Adverse voltages and undesirable interference may be experienced by other Customers on Distribution Provider's Distribution System caused by operation of the Generating Facility(ies).

c. Screen P: Safety and Reliability Tests

Does the location of the proposed Generating Facility or the aggregate generation capacity on the Line Section create impacts to safety or reliability that cannot be adequately addressed without Detailed Study?

- If yes (fail), review of the failure may determine the requirements to address the failure; otherwise Electrical Independence Tests and Detailed Studies are required. Continue to Section G.3.
- If no (pass), Supplemental Review is complete.

Significance: In the safety and reliability test, there are several factors that may affect the nature and performance of an Interconnection. These include, but are not limited to:

1. Generation energy source

2. Modes of synchronization

3. Unique system topology

4. Possible impacts to critical load customers

5. Possible safety impacts

The specific combination of these factors will determine if any system study requirements are needed. The following are some examples of the items that may be considered under this screen:

1. Does the Line Section have significant minimum loading levels dominated by a small number of customers (i.e. several large commercial customers)?

2. Is there an even or uneven distribution of loading along the feeder?

3. Is the proposed Generating Facility located in close proximity to the substation (i.e. <2.5 electrical line miles), and is the distribution line from the substation to the customer composed of large conductor/cable (i.e. 600A class cable)?

4. Does the Generating Facility incorporate a time delay function to prevent reconnection of the generator to the system until system voltage and frequency are within normal limits for a prescribed time?

5. Is operational flexibility reduced by the proposed Generating Facility, such that transfer of the line section(s) of the Generating Facility to a neighboring distribution circuit/substation may trigger overloads or voltage issues?

6. Does the Generating Facility utilize Certified anti-islanding functions and equipment?

3. Detailed Study Screens

a. Screen Q: Is the Interconnection Request electrically Independent of the Transmission System?

Distribution Provider, in consultation with the CAISO, will determine, based on knowledge of the interdependencies with earlier-queued interconnection requests under any tariff, whether the Interconnection Request to the Distribution System is of sufficient MW size and located at a point of interconnection such that it is reasonably anticipated to require or contribute to the need for Network Upgrades. If Distribution Provider determines that no interdependencies exist as described above, then the Interconnection Request will be deemed to have passed Distribution Provider's Determination of Electrical Independence for the CAISO Controlled Grid. If Distribution Provider determines that interdependencies exist as described above, then Applicant may be studied under the Transmission Cluster Study Process as set forth in Section F.3.c.

Distribution Provider will coordinate with the CAISO if necessary conduct the Determination of Electrical Independence for the CAISO Controlled Grid as set forth in Section 4.2 of Appendix Y to the CAISO Tariff. The results of the incremental power flow, aggregate power flow, and short-circuit current contribution tests set out in Section 4.2 of Appendix Y to the CAISO Tariff will determine whether the Interconnection Request is electrically independent from the CAISO Controlled Grid.

- If Yes (pass), continue to Screen R.
- If No (fail), proceed to Section F.3.c.

Note 1: NEM Generating Facilitiess with net export less than or equal to 500 kW that may flow across the Point of Common Coupling into Distribution Provider's will not be studied in the Transmission Cluster Study Process, but may be studied under the Independent Study Process.

Significance: Generating Facilities that are interdependent with the Transmission System must be studied with other interconnection requests that have Transmission System interdependencies. It is possible to pass this Screen R (i.e., be found to have no electrical interdependencies with earlier-queued Distribution System and/or Transmission System interconnection requests as set out above, be studied under the Independent Study Process, and still trigger a Reliability Network Upgrade.

b. Screen R: Is the Interconnection Request independent of other earlier-queued and yet to be studied interconnection requests interconnecting to the Distribution System?

For Interconnection Requests that are electrically independent from the CAISO Controlled Grid, Distribution Provider will evaluate each Interconnection Request for known or reasonably anticipated relationships between the Interconnection Request and any earlier-queued interconnection requests in the Distribution Group Study Process, the Independent Study Process, or interconnection requests studied under predecessor interconnection procedures that have yet to complete their respective interconnection system impact study or Phase I interconnection study. Distribution Provider may conduct incremental power flow, aggregate power flow, and/or short-circuit duty tests using existing interconnection studies, Base Case data, overall system knowledge, and engineering judgment to determine whether an Interconnection Request can be studied independently of earlier-queued interconnection requests. If the Interconnection Request being evaluated for electrical independence on the Distribution System may be electrically related to earlier-queued interconnection requests that have yet to complete either interconnection system impact study or Phase I interconnection study, then it fails the evaluation of electrical independence for the Distribution System.

- If Yes (pass), continue to Independent Study Process
- If No (fail), continue to the Distribution Group Study Process

Significance: Interconnection Requests that are electrically related to earlier queued interconnection requests that have not yet been studied do not qualify for independent study.

c. Independent Study Process Interconnection Studies

The Interconnection Studies shall consist of an Interconnection System Impact Study and an Interconnection Facilities Study. The Interconnection Studies will identify Interconnection Facilities, Distribution Upgrades and Reliability Network Upgrades necessary to mitigate thermal overloads and voltage violations, and address short circuit, stability, and reliability issues associated with the requested Interconnection Service. If Distribution Provider anticipates that Reliability Network Upgrades will be required, or the Interconnection Studies identify the need for Reliability Network Upgrades, then Distribution Provider will coordinate with the CAISO during the study process as set forth in Section F.3.d above.

i) Interconnection System Impact Study.

(1) Scope of the Interconnection System Impact Study.

The Interconnection System Impact Study may consist of a localized short circuit analysis, a stability analysis, a power flow analysis, and any other studies that are deemed necessary. The localized short circuit analysis will evaluate impacts to the Distribution and Transmission System only with any local short circuit-duty related Reliability Network Upgrades allocated to the Generating Facility that requires the upgrades. Short circuit duty impacts to the CAISO Controlled Grid are appropriately

evaluated only in the Transmission Cluster Study Process as set forth in Section F.3.c. The short circuit duty contribution of any Interconnection Requests studied in the Independent Study Process that are subsequently identified in the Cluster Study Process will be allocated its pro rata share of the short circuit duty-related Reliability Network Upgrades on the basis of the short circuit duty contribution of each Generating Facility.

The Interconnection System Impact Study shall state the assumptions upon which it is based, state the results of the analyses, and provide the requirement or potential impediments to providing the requested Interconnection Service, including a preliminary indication of the cost and length of time that would be necessary to correct any problems identified in those analyses and implement the Interconnection.

The Interconnection System Impact Study shall provide a list of Distribution Provider's Interconnection Facilities, Distribution Upgrades, and Reliability Network Upgrades that are required as a result of the Interconnection Request along with a non-binding good faith estimate of cost responsibility and the amount of construction time required.

ii) Interconnection Facilities Study.

(1) Scope and Purpose of the Interconnection Facilities Study.

The Interconnection Facilities Study shall specify and estimate the cost of the equipment, engineering, procurement, and construction work (including overheads) needed to implement the conclusions of the Interconnection System Impact Study technical analyses in accordance with Good Utility Practice to physically and electrically connect the Generating Facility to the Distribution or Transmission System. The Interconnection Facilities Study shall also identify (i) the electrical switching configuration of the connection equipment, including, without limitation: the transformer, switchgear, meters, and other station equipment; the nature and estimated cost of any Distribution Provider's Interconnection Facilities, Distribution Upgrades, and Network Upgrades necessary to accomplish the interconnection; and an estimate of the time required to complete the construction and installation of such facilities.

H. Generating Facility Design and Operating Requirements

This section is 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 Distribution Provider's Distribution and Transmission System and not the Generating Facility. A Producer shall be solely responsible for providing adequate protection for its Generating Facility and Interconnection Facilities. Producer's Protective Functions shall not impact the operation of other Protective Functions on Distribution Provider's

Distribution and Transmission System in a manner that would affect Distribution Provider's capability of providing reliable service to its customers.

a. Protective Functions Required

Generating Facilities operating in parallel with Distribution Provider's Distribution or Transmission System shall be equipped with the following Protective Functions to sense abnormal conditions on Distribution Provider's Distribution or Transmission System and cause the Generating Facility to be automatically disconnected from Distribution Provider's Distribution or Transmission System or to prevent the Generating Facility from being connected to Distribution Provider's Distribution or Transmission 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 or Transmission System circuit and to prevent the Generating Facility from reconnecting with Distribution Provider's Distribution or Transmission System unless Distribution Provider's Distribution System service voltage and frequency is within the ANSI C84.1-1995 Table 1 Range B voltage Range of 106 volts to 127 volts (on a 120 volt 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 Distribution Provider's Distribution System within two seconds of the formation of an Unintended Island.

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

b. Momentary Paralleling Generating Facilities

With Distribution Provider's approval, the transfer switch or scheme used to transfer Producer's loads from Distribution Provider's Distribution or Transmission System to Producer's Generating Facility may be used in lieu of the Protective Functions required for Parallel Operation.

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 Distribution Provider's Distribution and Transmission 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 L.3.e (IEEE 1547-4.1.8.2).

d. Visible Disconnect Required

When required by Distribution Provider's operating practices, Producer shall furnish and install a ganged, manually-operated isolating switch (or a comparable device mutually agreed upon by Distribution Provider and Producer) near the Point of Interconnection to isolate the Generating Facility from Distribution Provider's Distribution or Transmission 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) a) for Emergency purposes be capable of being reached quickly and conveniently 24 hours a day by Distribution Provider personnel for construction, operation, maintenance, inspection, testing or to isolate the Generating Facility from Distribution Provider's Distribution or Transmission System without obstacles or requiring those seeking access to obtain keys, special permission, or security clearances.

b) for Non-Emergency purposes be capable of being reached during normal business hours. Distribution Provider, where possible, will provide notice to Customer for gaining access to Customer's premises.

(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 Distribution Provider prior to installation. If the device is not adjacent to the PCC, permanent signage must be installed at a Distribution Provider approved location providing a clear description of the location of the device. If the switch is not accessible outside the locked premises, signage with contact information and a Distribution Provider approved locking device for the premises shall be installed.

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, Distribution Provider shall approve Producer's Protective Function and control diagrams. Generating Facilities equipped with Protective Functions and a control scheme previously approved by Distribution Provider 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, Distribution Provider and Producer may agree upon other arrangements.

2. Prevention of Interference

Producer shall not operate Generating or Interconnection Facilities that superimpose a voltage or current upon Distribution Provider's Distribution or Transmission System that interferes with Distribution Provider operations, service to Distribution Provider Customers, or communication facilities. If such interference occurs, Producer must diligently pursue and take corrective action at its own expense after being given notice and reasonable time to do so by Distribution Provider. If Producer does not take corrective action in a timely manner, or continues to operate the facilities causing interference without restriction or limit, Distribution Provider may, without liability, disconnect Producer's facilities from Distribution Provider's Distribution or Transmission System, in accordance with Section D.9 of this Rule. To eliminate undesirable interference caused by its operation, each Generating Facility shall meet the following criteria:

a. Voltage Regulation

The Generating Facility shall not actively regulate the voltage at the PCC while in parallel with Distribution Provider's Distribution System. The Generating Facility 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. Voltage Trip Setting

The voltage ranges in Table H.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 Distribution Provider'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.

i) Generating Facilities (30 kVA or less)

Generating Facilities with a Gross Rating of 30 kVA or less shall be capable of operating within the voltage range normally experienced on Distribution Provider's Distribution System from plus to minus 5% of the nominal voltage (e.g. 114 volts to 126 volts, on a 120 volt base), at the service panel or PCC. The trip settings at the generator terminals may 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) to compensate for voltage drop between the generator terminals and the PCC. Voltage may be detected at either the PCC or the Point of Interconnection. However, the voltage range at the PCC, with the generator on-line, shall stay within +/-5% of nominal.

ii) Generating Facilities (greater than 30 kVA)

Distribution Provider may have specific operating voltage ranges for Generating Facilities with Gross Ratings greater than 30 kVA, and may require adjustable operating voltage settings. In the absence of such requirements, the Generating Facility shall be capable of operating 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. However, the voltage range at the PCC, with the generator on-line, shall stay within +/- 5% of nominal.

iii) Voltage Disturbances

Whenever Distribution Provider's Distribution System voltage at the PCC varies from and remains outside normal (Nominally 120 volts) for the predetermined parameters set forth in Table H-1, the Generating Facility's Protective Functions shall cause the Generator(s) to become isolated from Distribution Provider's Distribution System:

Table H.1: Voltage Trip Settings for Generating Facilities*			
Voltage at Point of Common Coupling (the ranges below are used to trip the generator during abnormal distribution system conditions)		Maximum Trip Time**	
Assuming 120 Volt Base	% of Nominal Voltage	# of Cycles (Assuming 60 Hz Nominal)	Seconds
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 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

**For Generating Facilities with a Rating greater than 30 kVA, set points shall be field adjustable and different voltage set points and trip times from those in Table H.1 may be negotiated with Distribution Provider*

*** "Maximum Trip Time" refers to the time between the onset of the abnormal condition and the Generating Facility ceasing to energize Distribution Provider's Distribution System. Protective Function equipment and circuits may remain connected to Distribution Provider'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 for a Generating Facility to minimize tripping during short term system disturbances. Set points shall not be user adjustable for generating facilities less than 30 kW.*

c. Paralleling

The Generating Facility shall parallel with Distribution Provider's Distribution or Transmission System without causing a voltage fluctuation at the PCC greater than plus/minus 5% of the prevailing voltage level of Distribution Provider's Distribution or Transmission System at the PCC, and meet the flicker requirements of Section H.2.d.

Section L, Certification and Testing Criteria, 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 Distribution Provider's Distribution or Transmission 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 Distribution Provider's Distribution or Transmission 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 Distribution Provider's Distribution System Grounding

The grounding scheme of the Generating Facility shall not cause over-voltages that exceed the rating of the equipment connected to Distribution Provider's Distribution System and shall not disrupt the coordination of the ground fault protection on Distribution Provider's Distribution System (IEEE 1547-4.1.2) (See Section G.1.i, line configuration).

f. Frequency

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

Table H.2
Frequency Trip Settings

Generating Facility Rating	Frequency Range (Assuming 60Hz Nominal)	Maximum Trip Time *[1]* (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 Distribution Provider's Distribution or Transmission System. Protective Function sensing equipment and circuits may remain connected to Distribution Provider's Distribution or Transmission 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 Rating greater than 30 kVA, set points shall be field adjustable and different voltage set points and trip times from those in Table H.2 may be negotiated with Distribution Provider.

[2] – Unless otherwise required by Distribution Provider, 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 Distribution Provider's Distribution or Transmission System at the PCC shall not exceed the limits stated in Table H.3. The harmonic current injections shall be exclusive of any harmonic currents due to harmonic voltage distortion present in Distribution Provider's Distribution or Transmission System without the Generating Facility connected (IEEE 1547-4.3.3.). The harmonic distortion of a Generating Facility shall be evaluated using the same criteria as for the Host Loads.

Table H.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 Distribution Provider's Distribution or Transmission System.

i. Power Factor

Producer shall provide adequate reactive power compensation on site to maintain the Generating Facility power factor near unity at rated output or an Distribution Provider specified power factor within a power factor range from 0.9 leading to 0.9 lagging, based on local system conditions. While not required, for generators that do not have inherent reactive power control capability Distribution Provider at its option may offer reactive power support in the form of power factor correction capacitors on its Distribution or Transmission System, under a Generator Interconnection Agreement or an Added Facilities or Special Facilities agreement, as described in Rule 2.H,as applicable.

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. Producer shall be responsible for properly synchronizing its Generating Facility with Distribution Provider's Distribution or Transmission 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 H.2.d (Flicker) (IEEE1547-4.2.5). Unless otherwise agreed upon by Producer and Distribution Provider, synchronous Generators shall automatically regulate power factor, not voltage, while operating in parallel with Distribution Provider's Distribution System. A power system stabilization Function is specifically not required for Generating Facilities under 10 MW Net Rating.

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 Distribution Provider's Distribution or Transmission 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 Producer's side of the PCC, Distribution Provider must review these measures. Additional equipment may be required as determined in a Supplemental Review or an Interconnection Study.

c. Inverters

Grid-interactive inverters do not require separate synchronizing equipment. Non-grid-interactive or "stand-alone" inverters shall not be used for Parallel Operation with Distribution Provider's Distribution or Transmission System.

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 Distribution Provider's Distribution or Transmission System within two seconds of the formation of an Unintended Island shall be equipped with Protective Functions designed to detect Distribution or Transmission System faults, both line-to-line and line-to-ground, and cease to energize Distribution Provider's Distribution or Transmission System within two seconds of the initiation of a fault.

b. Transfer Trip

For a Generating Facility that cannot detect Distribution or Transmission System faults (both line-to-line and line-to-ground) or the formation of an Unintended Island, and cease to energize Distribution Provider's Distribution or Transmission System within two seconds, Distribution Provider 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, Distribution Provider may require additional Protective Functions, including, but not limited to recluse-blocking on some of the automatic reclosing devices.

I. Third-Party Installations, Reservation of Unused Facilities, and Refund of Salvage Value

1. Interconnection Facilities and Distribution Upgrades

Except as provided for in the Generator Interconnection Agreement of this Rule, Interconnection Facilities connected to Distribution Provider's side of the PCC and Distribution Upgrades shall be provided, installed, owned, and maintained by Distribution Provider at Producer's expense.

2. Third-Party Installations

Subject to the approval of Distribution Provider, a Producer may, at its option, employ a qualified contractor to provide and install Interconnection Facilities or Distribution Upgrades, to be owned and operated by Distribution Provider, on Distribution Provider's side of the PCC. Such Interconnection Facilities and Distribution Upgrades shall be installed in accordance with Distribution Provider's design and specifications. Upon final inspection and acceptance by Distribution Provider, Producer shall transfer ownership of such Producer installed Interconnection Facilities or Distribution Upgrades to Distribution Provider and such facilities shall thereafter be owned and maintained by Distribution Provider at Producer's expense. Producer shall pay Distribution Provider's reasonable cost of design, administration, and monitoring of the installation for such facilities to ensure compliance with Distribution Provider's requirements. Producer shall also be responsible for all costs, including any income tax liability, associated with the transfer of Producer installed Interconnection Facilities and Distribution Upgrades to Distribution Provider.

3. Reservation of Unused Facilities

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

4. Refund of Salvage Value

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

J. Metering, Monitoring and Telemetering

1. General Requirements

All Generating Facilities shall be metered in accordance with this Section J and shall meet all applicable standards of Distribution Provider contained in Distribution

Provider's applicable tariffs and published Distribution Provider manuals dealing with Metering specifications.

2. Metering by Non-Distribution Provider Parties

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

3. Net Generation Output Metering

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

However, Generating Facility customers do not need to install Net Generation Output Metering where less intrusive and/or more cost effective options, for Producer/Customer, are available for providing generator data to Distribution Provider. These Generating Facilities may opt to have Distribution Provider estimate load data in accordance with Distribution Provider'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 Distribution Provider's estimate of the Generator(s) output, the customer may elect to install the Net Generation Output Metering, or have Distribution Provider install Net Generation Output Metering at the customer's expense.

All metering options available to the customer must conform to the requirements set forth in Distribution Provider's Rule 22 [Rule 25 for SDG&E]. If Distribution Provider does not receive meter data in accordance with Rule 22, Distribution Provider shall have the right to install Distribution Provider-owned Net Generation Output Metering at the customer's expense. The relevant factors in determining the need for Net Generation Output Metering are as listed below:

(a) Data requirements in proportion to need for information;

(b) Producer's election to install equipment that adequately addresses Distribution Provider'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 Generator Interconnection Agreement with Producer.

The requirements in this Section may not apply to Metering of Generating Facilities operating under Distribution Provider's Net Energy Metering tariff pursuant to California PUC section 2827, et seq. Nothing in this Section J.3 supersedes Section D.4, Compliance with Laws, Rules and Tariff Schedules.

Distribution Provider will report to the Commission or designated authority, on a quarterly basis, the rationale for requiring Net Generation Output Metering equipment in each instance along with the size and location of the facility.

4. Point of Common Coupling (PCC) Metering

For purposes of assessing Distribution Provider's charges for retail service, Producer's PCC Metering shall be reviewed by Distribution Provider, 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 Producer's site can be separately recorded. Alternately, Producer may, at its sole option and cost, require Distribution Provider to install multi-metering equipment to separately record power deliveries to Distribution Provider's Distribution System and retail purchases from Distribution Provider. Where necessary, such PCC Metering shall be designed to prevent reverse registration.

Generating Facilities for Net Energy Metering under PUC sections 2827, et seq. shall have metering provided pursuant to the terms of the applicable Net Energy Metering Tariff Schedule.

5. Telemetering

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

6. Location

Where Distribution Provider-owned Metering is located on Producer's premises, Producer shall provide, at no expense to Distribution Provider, a suitable location for all such Metering Equipment.

7. Costs of Metering

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 J.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.

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 J.3.

K. Dispute Resolution Process

In addition to the informal procedures for timeline-related disputes set out in Section F.1.d, the following procedures will apply for disputes arising from this Rule:

1. Scope

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

2. Procedures

Any dispute arising between Distribution Provider and Producer (individually referred to in Section K as "Party" and collectively "the Parties") regarding Distribution Provider'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:

a. The dispute shall be documented in a written notice ("notice")by the aggrieved Party 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 this Section. The notice shall be sent to the Party's email address and physical address set forth in the Generator Interconnection Agreement or Interconnection Request, if there is no Generator

Interconnection Agreement. A copy of the notice shall also be sent to the Energy Division, Office of the Director, at the Commission. The receiving Party shall acknowledge the notice within five (5) Calendar Days of its receipt.

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 seven (7) Calendar Days. In addition, upon receipt of the notice, Distribution Provider shall provide the aggrieved Party with all relevant regulatory and/or technical details and analysis regarding any Distribution Provider interconnection requirements under dispute within twenty-one (21) Calendar Days.

Within forty-five (45) Calendar Days of the date of the notice, the Parties' authorized representatives will be required to meet and confer to try to resolve the dispute. Parties are expected to operate in good faith and use best efforts to resolve the dispute.

b. If a resolution is not reached in forty-five (45) Calendar Days from the date of the notice, either 1) a Party may request to continue negotiations for an additional forty-five (45) Calendar Days or 2) the Parties may by mutual agreement make a written request for mediation to the ADR Coordinator in the Commission's ALJ Division. The request may be submitted by electronic mail to adr_program@cpuc.ca.gov. 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. At any time, either Party may file a formal complaint before the Commission pursuant to California PUC section 1702 and Article 4 of the Commission's Rules of Practice and Procedure.

Nothing in this section shall be construed to limit the rights of any Party to exercise rights and remedies under Commission law.

3. Performance During Dispute

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 Interconnection Request and implementation of this Section shall be subject to resolution pursuant to the procedures set forth in this Section.

L. Certification and Testing Criteria

1. Introduction

This Section describes the test procedures and requirements for equipment used for the Interconnection of Generating Facilities to Distribution Provider's Distribution or Transmission 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 B, 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 H of this Rule, are intended to provide assurance that the Generating Facility's equipment will not adversely affect Distribution Provider's Distribution or Transmission System and that a Generating Facility will cease providing power to Distribution Provider's Distribution or Transmission System under abnormal conditions. The tests were developed assuming a low level of Generating Facility penetration or number of connections to Distribution Provider's Distribution or Transmission System. At high levels of Generating Facility penetration, additional requirements and corresponding test procedures may need to be defined.

Section L 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 Distribution Provider's Distribution or Transmission System. Subject to the exceptions described in Section L, Distribution Provider 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 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 Requests submitted through May 7, 2007, the effective date of the revised "UL 1741."

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 Distribution Provider's Distribution or Transmission 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 Distribution Provider for each Generating and/or Interconnection Facility. The manufacturer or a laboratory acceptable to Distribution Provider may perform these tests. Test results for non-Certified equipment must be submitted to Distribution Provider for the Supplemental Review. Approval by Distribution Provider for equipment used in a particular Generating and/or Interconnection Facility does not guarantee Distribution Provider's approval for use in other Generating and/or Interconnection Facilities.

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 L.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, Distribution Provider or NRTL shall adapt the procedures referenced in Table L.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 JL.2 on the next page.

Table L.1

Type Test and Requirements for Interconnection Equipment Certification

Type Test	Reference (1)	Inverter	Synchronous Generator	Induction Generator
Distribution Provider 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	—	—
Distribution Provider 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	[L.3.e	X	X	X
Anti-Islanding	L.3.b	(2)	(2)	(2)
Non-Export	L.3.c	(3)	(3)	(3)
In-rush Current	-L.3.d	—	—	(4)
Synchronization	L.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 Distribution Provider 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 Distribution Provider's Distribution or Transmission System.
X = Required
- = Not Required

Table L.2 Type Tests Sequence for Interconnection Equipment Certification

Test No.	Type Test
1	Distribution Provider Voltage and Frequency Variation
2	Synchronization

3 Surge Withstand Capability

4 Distribution Provider 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 L.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.

d. In-rush Current Test

Generation equipment that utilizes Distribution Provider power to motor up to speed will be tested using the procedure defined in Section L.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 H.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 Distribution Provider's Distribution or Transmission 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 L.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 L.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 Distribution Provider's Distribution or Transmission 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.

Table L.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 L.1 shall be performed on the paralleling device to ensure compliance with those requirements specified in Section H.1.c (IEEE 1547-5.1.3.3).

4. Production Testing

As a minimum, each interconnection system shall be subjected to Distribution Provider Voltage and Frequency Variation Test procedure described in UL1741 under Manufacturing and Production Tests, Section 68 and the Synchronization test specified in Section L.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 L.5).

5. Commissioning Testing

a. Commissioning Testing

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.

Distribution Provider may require written Commissioning test procedure be submitted to Distribution Provider at least 10 working days prior to the performance of the Commissioning Test. Distribution Provider has the right to witness Commissioning Test, Distribution Provider 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:

(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 Distribution Provider source is stable

(7) Distribution Provider system fault detection (if used)

(8) Synchronizing controls (if applicable)

(9) Other Interconnection Protective Functions that may be required as part of the Generator Interconnection Agreement

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

b. 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 E of this Rule. If the initial Commissioning Test verification is not successful through no fault of Distribution Provider, Distribution Provider may impose upon 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 Distribution Provider's invoice. The invoice provided by Distribution Provider shall consist of the hourly rate multiplied by the hours incurred by Distribution Provider and will separately specify the amount of time spent on-site from that spent in roundtrip travel to the Commissioning Test site. Additional cost, if any, will be specified on the invoice. If the initial Commissioning Test verification is not successful through the fault of Distribution Provider, that visit will not be considered the initial Commissioning Test verification.

c. Other Checks and Tests

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

(1) Verifying final Protective Function settings

(2) Trip test (L.5.g)

(3) In-service tests (L.5.h)

d. Certified Equipment

Generating Facilities qualifying for interconnection through the Fast Track process 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 Distribution Provider's Distribution or Transmission 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 Distribution Provider voltage or frequency, or varying the set points to show that the device trips at the measured (actual) Distribution Provider 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 Distribution Provider's Distribution or Transmission 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.

e. Non-Certified Equipment

Non-certified Equipment shall be subjected to the appropriate tests described in Type Testing (Section L.3) as well as those described in Certified Equipment Commissioning Tests (Section L.5.d). With Distribution Provider's approval, these tests may be performed in the factory, in the field as part of commissioning, or a combination of both. Distribution Provider, 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.

f. Verification of Settings

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

g. 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

h. 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. Producer shall maintain Periodic Test reports or a log for inspection by Distribution Provider. Periodic Testing conforming to Distribution Provider test intervals for the particular Line Section may be specified by Distribution Provider 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 I, 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.

i) 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 I. It should be understood that in the reverse power application, the relay will provide a trip output with power flowing in the export (toward Distribution Provider's Distribution or Transmission System) direction.

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 <u>not</u> 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.

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.

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 L.3.e.

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 I. It should be understood that in the reverse power application , the relay will provide a trip output with power flowing in the export (toward Distribution Provider's Distribution or Transmission System) direction.

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.

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.

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.

ii) 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 I. A trip output will be provided when import power (toward 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 <u>less</u> 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).

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 <u>not</u> 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.

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 L.3.e.

iii) 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 L.7.a.i 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.

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 L.7.a.i 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.

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 Distribution Provider's Distribution or Transmission 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 Distribution Provider during the startup process, using a 10-cycle moving average. During the test, Distribution Provider 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 Distribution Provider.

M. Appendix One

Inadvertent Export

Inadvertent Export: "The unscheduled and uncompensated export of real power from a Generating Facility (GF) for a duration exceeding two seconds but less than 60 seconds."

Under certain operating conditions, an Applicant may choose to completely offset their facility load by installing generation systems which are optimally sized to meet their peak demand with load following functionality on the Generator controls to ensure conditional export of electrical power from the Generating Facility to Distribution Provider's Distribution or Transmission System. In situations where the loading changes rapidly and/or the Generator cannot ramp down quickly enough, the Generating Facility may need to export small amounts of power for limited duration. The event of exporting uncompensated power for a short time is referred to as Inadvertent Export.

It is proposed that the following criteria be the minimum requirements for Inadvertent Export systems. It should be understood that other factors relevant to the interconnection study process (15% screen results, short circuit current ratio, etc.) may necessitate additional technical requirements (e.g. reclose block, transfer trip, ground bank, etc.) that are not explicitly noted here. Also, it should be noted that Inadvertent Export may not be available for interconnections to Networked Secondary Systems.

1) If a Generating Facility is proposed with Inadvertent Export, additional Protective Functions and equipment to detect Distribution or Transmission System faults (per Distribution Providers standard practices) may be required over and above the basic Protective Functions and equipment associated with the four options in the Export Screen. Protective Functions may include, but are not limited to, directional overcurrent/voltage-restraint overcurrent Protective Functions for line-to-line fault detection and overcurrent/overvoltage Protective Functions for line-to-ground detection. The addition of a ground bank or ground detector may also be necessary.

2) The effect on equipment ratings can be mitigated by limiting the amount of inadvertent export allowed. To a large degree, Voltage Regulation may be similarly handled. The amount of Inadvertent Export is dependent on specific Distribution Provider requirements and should be limited to the lesser of the following values:

    a. 50% of the Generating Facility Capacity, or

    b. 10% of the continuous conductor rating in watts at 0.9 power factor for the lowest rated feeder conductor upstream of the GF (i.e. 200kW @ 12kV), or

    c. 110% of the largest load block in the facility, or

    d. 500kW or some other maximum level indicated by Distribution Provider

To govern this quantity, a reverse power Protective Function will be provided to trip the connected Generator(s) within two seconds if the proposed amount of Inadvertent Export is exceeded.

3) Similarly, to ensure limited impact to the Distribution or Transmission System, the expected frequency of Inadvertent Export occurrences should be less than two occurrences per 24-hour period. Additionally, a separate reverse power or underpower Protective Function will be required (in addition to the reverse power Protective Function described in 2) above) to trip the connected Generator(s) if the duration of reverse power or underpower (i.e. ANY export) exceeds 60 seconds.

Pacific Gas and Electric Company™

WE DELIVER ENERGY.℠

RULE 21
EXPORTING GENERATOR
INTERCONNECTION REQUEST

1. The undersigned Applicant submits this request to interconnect its Generating Facility with the Pacific Gas and Electric Company (PG&E or Distribution Provider) Distribution System pursuant to Rule 21 (check only one):
   - ☐ Detailed Study Process
   - ☐ Fast Track Process

2. This Interconnection Request is for (check only one):
   - ☐ A proposed new Generating Facility.
   - ☐ An increase in the generating capacity or a Material Modification of an existing Generating Facility.

3. Applicant provides the following information:

   a. Address (to the extent known) or location, including the county, of the proposed new Generating Facility site or, in the case of an existing Generating Facility, the name and specific location, including the county, of the existing Generating Facility;

      Project Name:

      Project Location:
      Street Address:
      City, State:
      County:
      Zip Code:
      GPS Coordinates:

   b. Maximum net megawatt electrical output (as defined by section 2.c. of Attachment A to this appendix) of the proposed new Generating Facility or the amount of net megawatt increase in the generating capacity of an existing Generating Facility;

      Maximum net megawatt electrical output (MW): _____ or
      Net Megawatt increase (MW): _____

   c. Type of project (i.e., gas turbine, hydro, wind, etc.) and general description of the equipment configuration (if more than one type is chosen, include net MW for each);

___ Cogeneration _____ MW
___ Reciprocating Engine _____ MW
___ Biomass _____ MW
___ Steam Turbine _____ MW
___ Gas Turbine _____ MW
___ Wind _____ MW
___ Hydro _____ MW
___ Inverter Based: (e.g., Photovoltaic, Fuel Cell) _____ MW
If Fuel Cell, please describe primary fuel source:
___ Combined Cycle _____ MW
___ Other (please describe):_____

d. Proposed In-Service Date, and Other Key Dates (Day/Month/Year) (Dates must be sequential)

Proposed In-Service Date: / /
Proposed Trial Operation Date: / /
Proposed Commercial Operation Date: / /
Proposed Term of Service (years): _____

e. Name, address, telephone number, and e-mail address of Applicant (primary person who will be contacted);

Name:
Title:
Company Name:
Street Address:
City, State:
Zip Code:
Phone Number:
Fax Number:
Email Address:

f. Approximate location of the proposed Point of Interconnection (i.e., specify distribution facility interconnection point name, voltage level, and the location of interconnection);

g. Applicant Data (set forth in Attachment A)

The Applicant shall provide to the Distribution Provider the technical data called for in Attachment A.

h. AC Disconnect Switch. List the AC disconnect switch that will be used at this Generating Facility (enter "N/A" if not applicable)

Disconnect Switch Manufacturer: _____
Disconnect Switch Model Number: _____
Disconnect Switch Rating (amps): _____

4. Application Fee or Detailed Study Deposit as specified in Rule 21 is required to complete this application. Upon receipt of this Interconnection Request and Attachment A, PG&E will send a separate invoice for the applicable fee or deposit. **PLEASE DO NOT INCLUDE ANY CHECKS/MONIES WITH THIS INTERCONNECTION REQUEST**. (Any checks/monies submitted with this IR will be returned to the sender and may result in a delay in the application process.)

5. Attach evidence of Site Exclusivity as specified in Rule 21 Section E.2.d as applicable, and name(s), address(es) and contact information of site owner(s).

6. This Interconnection Request shall be submitted digitally with attachments by email to:

www.gen@pge.com

or by mail to:
Generator Interconnection Services
Pacific Gas and Electric Company
P.O. Box 770000
San Francisco, CA 94177

Overnight address: 245 Market Street Mail Code N7L San Francisco, CA 94105

7 Representative of Applicant to contact:

[To be completed by Applicant]
Name:
Title:
Company Name:
Street Address:
City, State:
Zip Code:
Phone Number:
Fax Number:
Email Address:

8. If the Applicant also requires new Distribution Service, the Distribution Provider will coordinate these efforts with this application. The Applicant must also complete a PG&E Application for Service. Additional fees may be required if a service or line extension is required (in accordance with PG&E Electric Rules 15 and 16). Please contact PG&E's Building and Renovation Services Center (BRSC): 1-800-743-7782 to initiate the application for the new Distribution Service. Additional information will be required in conjunction with an application for new Distribution Service.

9. Applicant should be aware that if Applicant has not yet received Rule 21 Screen Q results from PG&E by March 15 following submittal of this IR, Applicant will need to submit, if Applicant voluntarily chooses to do so, an Interconnection Request under PG&E's FERC Wholesale Distribution Tariff (WDT) by the close of the CAISO cluster application window(refer to http://www.caiso.com/docs/2002/06/11/2002061110300427214.html for the exact date) in order to participate in the Transmission Cluster Study for the year. An application under WDT will not impact the results of this Rule 21 study.

10. This Interconnection Request is submitted by:

Legal name of Applicant: _____

By (signature): _____

Name (type or print): _____

Title: _____

Date: _____

Attachment A to PG&E Rule 21 Exporting Generator Interconnection Request

GENERATING FACILITY DATA

Each Applicant will complete Sections 1 and 2 of this Attachment A.
Each Applicant will complete the applicable data in Sections 3 through 6 of this Attachment A based on the type of generating facility(ies) requesting interconnection. (Section 3 for synchronous generators, Section 4 for induction generators, Section 5 for wind turbine generators, and Section 6 for inverter-based generators).
Each Applicant will complete Sections 7 through 10, as applicable.
At any time, Distribution Provider may require Applicant to provide additional technical data, or additional documentation supporting the technical data provided, as deemed necessary by the Distribution Provider to perform Interconnection Studies, other studies, or evaluations as set forth under Rule 21.

1. Provide electronic copies of the following:

A. Site drawing to scale, showing generator location and Point of Interconnection with the Distribution Provider's Distribution System.
B. Single-line diagram showing applicable equipment such as generating units, step-up transformers, auxiliary transformers, switches/disconnects of the proposed interconnection, including the required protection devices and circuit breakers. For wind and photovoltaic generator projects, the one line diagram should include the distribution lines connecting the various groups of generating units, the generator capacitor banks, the step up transformers, the distribution lines, and the substation transformers and capacitor banks at the Point of Interconnection with the Distribution Provider's Distribution System. This one-line drawing must be signed and stamped by a licensed Professional Engineer if the Generating Facility is larger than 50 kW.
C. AC and DC schematics if available. Required for detailed study process.
D. Description of operations.

Note: Electronic processing is preferred, however, if submitting via U.S. mail, provide one original print of items in A through D, above.

2. Generating Facility General Information:

A. Total Generating Facility rated output (MW): _____
B. Generating Facility auxiliary Load (MW): _____
C. Project net capacity (MW): _____
D. Standby Load when Generating Facility is off-line (MW): _____
E. Number of Generating Units: _____
(Please repeat the following items for each generator)
F. Individual generator rated output (MW for each unit): _____
G. Type (induction, synchronous, D.C. with inverter): _____
H. Phase (3 phase or single phase): _____

3. Synchronous Generator –Information:

3A Generator Information:
(Please repeat the following for each generator)

A. Manufacturer: _____
B. Year Manufactured:_____
C. Rated Generator speed (rpm):_____
D. Rated MVA: _____
E. Rated Terminal Voltage (kV): _____
F. Rated Generator Power Factor Range: _____
G. Generator Efficiency at Rated Load (%): _____
H. Moment of Inertia (including prime mover): _____
I. Inertia Time Constant (on machine base) H: _____ sec or MJ/MVA
J. SCR (Short-Circuit Ratio - the ratio of the field current required for rated open-circuit voltage to the field current required for rated short-circuit current): _____
K. Please attach generator reactive capability curves.
L. Rated Hydrogen Cooling Pressure in psig (Steam Units only): _____
M. Please attach a plot of generator terminal voltage versus field current that shows the air gap line, the open-circuit saturation curve, and the saturation curve at full load and rated power factor.

3B Excitation System Information:
(Please repeat the following for each generator)

A. Indicate the Manufacturer _____ and Type _____of excitation system used for the generator. For exciter type, please choose from 1 to 9 below or describe the specific excitation system.
   (1) Rotating DC commutator exciter with continuously acting regulator. The regulator power source is independent of the generator terminal voltage and current.
   (2) Rotating DC commentator exciter with continuously acting regulator. The regulator power source is bus fed from the generator terminal voltage.
   (3) Rotating DC commutator exciter with non-continuously acting regulator (i.e., regulator adjustments are made in discrete increments).
   (4) Rotating AC Alternator Exciter with non-controlled (diode) rectifiers. The regulator power source is independent of the

generator terminal voltage and current (not bus-fed).

(5) Rotating AC Alternator Exciter with controlled (thyristor) rectifiers. The regulator power source is fed from the exciter output voltage.

(6) Rotating AC Alternator Exciter with controlled (thyristor) rectifiers.

(7) Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from the generator terminal voltage.

(8) Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from a combination of generator terminal voltage and current (compound-source controlled rectifiers system.

(9) Other (specify): _____

B. Attach a copy of the block diagram of the excitation system from its instruction manual. The diagram should show the input, output, and all feedback loops of the excitation system.

C. Excitation system response ratio (ASA): _____

D. Full load rated exciter output voltage: _____

E. Maximum exciter output voltage (ceiling voltage): _____

F. Other comments regarding the excitation system? _____
_____

3C Turbine-Governor Information:
(Please repeat the following for each generator)

Please complete Part A for steam, gas or combined-cycle turbines, Part B for hydro turbines, and Part C for both.

A. Steam, gas or combined-cycle turbines:

(1) List type of unit (Steam, Gas, or Combined-cycle):_____

(2) If steam or combined-cycle, does the turbine system have a reheat process (i.e., both high and low pressure turbines)? _____

(3) If steam with reheat process, or if combined-cycle, indicate in the space provided, the percent of full load power produced by each turbine:

Low pressure turbine or gas turbine:_____%

High pressure turbine or steam turbine:_____%

(4) For combined cycle plants, specify the plant net output capacity (MW) for an outage of the steam turbine or an outage of a single combustion turbine:_____

B. Hydro turbines:

(1) Turbine efficiency at rated load: _____%

(2) Length of penstock: _____ft
(3) Average cross-sectional area of the penstock: _____ft2
(4) Typical maximum head (vertical distance from the bottom of the penstock, at the gate, to the water level): _____ft
(5) Is the water supply run-of-the-river or reservoir: _____
(6) Water flow rate at the typical maximum head: _____ft^3/sec
(7) Average energy rate: _____kW-hrs/acre-ft
(8) Estimated yearly energy production: _____kW-hrs

C. Complete this section for each machine, independent of the turbine type.

(1) Turbine manufacturer: _____
(2) Maximum turbine power output: _____MW
(3) Minimum turbine power output (while on line): _____MW
(4) Governor information:
(a) Droop setting (speed regulation): _____
(b) Is the governor mechanical-hydraulic or electro-hydraulic (Electro-hydraulic governors have an electronic speed sensor and transducer.)? _____
(c) Other comments regarding the turbine governor system?
_____
_____
_____
_____

3D Short Circuit Duty Information:
For each generator, provide the following reactances expressed in p.u. on the generator base:

- Xd – Direct Axis Synchronous Reactance: _____ p.u.
- X'd – Direct Axis Transient Reactance: _____ p.u.
- X"d – Direct Axis Subtransient Reactance: _____ p.u.
- X2 – Negative Sequence Reactance: _____ p.u.
- X0 – Zero Sequence Reactance: _____ p.u.

Generator Grounding (select one for each model):

A. _____ Solidly grounded
B. _____ Grounded through an impedance
(Impedance value in p.u. on generator base. R:_____p.u. X:_____p.u.)
C. _____ Ungrounded

4. Induction Generator Information:
(Please repeat the following for each generator)

A. Motoring Power (kW): _____
B. I_2^2t or K (Heating Time Constant): _____
C. Rotor Resistance, Rr: _____
D. Stator Resistance, Rs: _____
E. Stator Reactance, Xs: _____
F. Rotor Reactance, Xr: _____
G. Magnetizing Reactance, Xm: _____
H. Short Circuit Reactance, Xd": _____
I. Exciting Current: _____
J. Temperature Rise: _____
K. Frame Size: _____
L. Design Letter: _____
M. Reactive Power Required In Vars (No Load): _____
N. Reactive Power Required In Vars (Full Load): _____
O. Total Rotating Inertia, H: _____ Per Unit on kVA Base

5. Wind Turbine Generator (WTG) Information:

(Proposed projects may include one or more WTG types. Please repeat the following for each type of WTG).

A. WTG Manufacturer and Model: _____
B. Number of WTGs: _____
C. WTG Type (check one):
_____ Type 1 (Squirrel-cage induction generator)
_____ Type 2 (Wound rotor induction machine with variable rotor resistance)
_____ Type 3 (Doubly-fed asynchronous generator)
_____ Type 4 (Full converter interface)
D. Nameplate Rating (each WTG): _____/_____ kW/kVA
E. Rated Terminal Voltage: _____ kV
F. For Type 1 or Type 2 WTGs:
(1) uncompensated power factor at full load: _____
(2) power factor correction capacitors at full load: _____MVAR
(3) number of shunt stages and size: _____
(4) Please attach capability curve describing reactive power or power factor range from no output to full rated output, including the effect of shunt compensation
G. For Type 3 or Type 4 WTGs:
(1) Maximum under-excited power factor at full load: _____
(2) Maximum over-excited power factor at full load: _____
(3) Control mode: _____ (voltage control, fixed power factor)
(4) Please attach capability curve describing reactive power or power factor range from no output to full rated output
H. Short Circuit Characteristics: Applicant to provide technical data related to the short circuit characteristics of proposed WTGs for short circuit duty study

modeling purposes. For example, the applicant can provide manufacturer short circuit test data showing faulted condition for three phase and single-line-to-ground fault.

Distribution Provider may require testing verification of voltage and harmonic performance during commissioning test of WTG based generation projects.

6. Inverter Based Generation Systems Information:

Proposed inverter based generation projects may include one or more types of inverters. Please provide answers to the following for each type of inverter.

A. Inverter Manufacturer and Model: _____
B. Number of Inverters: _____
C. Nameplate Rating (AC, each inverter): _____/_____ kW
D. Nameplate Voltage Rating (AC): _____ kV
E. Maximum AC line current: _____ Amps
F. Nameplate Power Factor Rating (AC): _____
G. Please attach capability curve describing reactive power or power factor range from no output to full rated output
H. Inverter control mode (e.g. voltage, power factor, reactive power): _____
I. Short Circuit Characteristics: Applicant to provide technical data related to the short circuit characteristics of proposed inverter based generation systems. For example, the applicant can provide a sinusoidal waveform test data showing faulted condition at the AC side of the inverter for a three phase and single-line-to-ground fault.
J. Harmonics Characteristics:
   (1) Inverter switching frequency: _____
   (2) Harmonic characteristics for each unit up to switching frequency: _____
   (3) Harmonic characteristics for aggregate generation facility: _____
K. Inverter disconnection characteristics: Applicant to provide voltage sinusoidal waveform test data which shows the voltage characteristics during disconnection of inverter system from distribution system at 100% and at 50% of rated output.

Distribution Provider may require testing verification of voltage and harmonic performance during commissioning test of the inverter based generation systems.

7. Step-Up Transformer Data:

For each step-up transformer (e.g. main step-up transformers, padmount transformers), fill out the data form provided in Table 1.

8. Plant-Level Reactive Power Compensation Data:
Provide the following information for plant-level reactive power compensation, if applicable:

A. Number of individual shunt capacitor banks: _____
B. Individual shunt capacitor bank rated voltage (kV): _____
C. Individual shunt capacitor bank size (kVAR at rated voltage): _____
D. Planned dynamic reactive control devices (SVC, STATCOM): _____
E. Control range: _____ kVAR (lead) _____ kVAR (lag)
F. Control mode (e.g. voltage, power factor, reactive power): _____
G. Please provide the overall plant reactive power control strategy

9. Load Flow and Dynamic Models:
Only provide data in this section when requested by the Distribution Provider.

The WECC Data Preparation Manual for Power Flow Base Cases and Dynamic Stability Data has established power flow and dynamic modeling requirements for generation projects in WECC base cases. In general, if the aggregate sum of generation on a bus exceeds 10 MVA, it should not be netted. Furthermore, the total netted generation in an area should not exceed five percent of the area's total generation. Based on current WECC modeling requirements, the following information will be required for all generation projects whose net capacity is greater than 10 MVA. The following information may also be required for generation projects less than 10 MVA on a case-by-case basis, based on the amount of generation in the area of the requested Point of Interconnection.

A. Provide load flow model for the generating plant and its interconnection facilities in GE PSLF *.epc format, including new buses, generators, transformers, interconnection facilities. An equivalent model is required for the plant with generation collector systems. This data should reflect the technical data provided in this Attachment A.

B. For each generator, governor, exciter, power system stabilizer, WTG, or inverter based generator, select the appropriate dynamic models from the General Electric PSLF Program Manual and provide the required input data. Include any user written *.p EPCL files to simulate inverter based plants' dynamic responses (typically needed for inverter based PV/wind plants). Provide a completed *.dyd file that contains the information specified in this section.

The GE PSLF manual is available upon request from GE. There are links within the GE PSLF User's Manual to detailed descriptions of specific models, a definition of each parameter, a list of the output channels, explanatory notes, and a control system block diagram. In addition, GE PSLF modeling information and various modeling guidelines

documents have been prepared by the WECC Modeling and Validation Work Group. This information is available on the WECC website (www.wecc.biz).

If you require assistance in developing the models, we suggest you contact General Electric. Accurate models are important to obtain accurate study results. Costs associated with any changes in facility requirements that are due to differences between model data provided by the generation developer and the actual generator test data, may be the responsibility of the generation developer.

TABLE 1

TRANSFORMER DATA
(Provide for each level of transformation)

UNIT_____

NUMBER OF TRANSFORMERS_____ PHASE _____

RATING	H Winding	X Winding	Y Winding
Rated MVA	_____	_____	_____
Connection (Delta, Wye, Gnd.)	_____	_____	_____
Cooling Type (OA,OA/FA, etc) :	_____	_____	_____
Temperature Rise Rating	_____	_____	_____
Rated Voltage	_____	_____	_____
BIL	_____	_____	_____
Available Taps (% of rating)	_____	_____	_____
Load Tap Changer? (Y or N)	_____	_____	_____
Tap Settings	_____	_____	_____
IMPEDANCE	H-X	H-Y	X-Y
Percent	_____	_____	_____
MVA Base	_____	_____	_____
Tested Taps	_____	_____	_____
WINDING RESISTANCE	H	X	Y
Ohms	_____	_____	_____

CURRENT TRANSFORMER RATIOS

H_____ X_____ Y_____ N_____

PERCENT EXCITING CURRENT 100 % Voltage; _____ 110% Voltage_____

Supply copy of nameplate and manufacturer's test report when available.

Pacific Gas and Electric Company™

WE DELIVER ENERGY.℠

Rule 21 Generator Interconnection Agreement
for Exporting Generating Facilities
Interconnecting Under the Fast Track Process

TABLE OF CONTENTS

Article 1. Scope and Limitations of Agreement

1.1 Applicability
1.2 Purpose
1.3 No Agreement to Purchase or Deliver Power
1.4 Limitations
1.5 Responsibilities of the Parties
1.6 Parallel Operation Obligations
1.7 Metering
1.8 Reactive Power
1.9 Capitalized Terms

Article 2. Inspection, Testing, Authorization, and Right of Access

2.1 Equipment Testing and Inspection
2.2 Authorization Required Prior to Parallel Operation.
2.3 Right of Access

Article 3. Effective Date, Term, Termination, and Disconnection

3.1 Effective Date
3.2 Term of Agreement
3.3 Termination
3.4 Temporary Disconnection

Article 4. Cost Responsibility for Interconnection Facilities and Distribution Upgrades

4.1 Interconnection Facilities
4.2 Distribution Upgrades

Article 5. Cost Responsibility for Network Upgrades

5.1 Applicability
5.2 Network Upgrades
5.3 [Intentionally Omitted]
5.4 Rights Under Other Agreements

Article 6. Billing, Payment, Milestones, and Financial Security

6.1 Billing and Payment Procedures and Final Accounting
6.2 Milestones
6.3 Financial Security Arrangements

Article 7. Assignment, Liability, Indemnity, Uncontrollable Force, Consequential Damages, and Default

7.1 Assignment
7.2 Limitation of Liability
7.3 Indemnity
7.4 Consequential Damages
7.5 Uncontrollable Force.
7.6 Default

Article 8. Insurance

8.1 General Liability and Additional Insurance
8.2 Maintenance of Insurance
8.3 Notification

Article 9. Confidentiality

9.1 Definition of Confidential Information

Article 10. Disputes

10.1 Dispute Resolution

Article 11. Taxes

11.1 Applicable Tax Laws and Regulations
11.2 Maintenance of Tax Status

Article 12. Miscellaneous

12.1 Governing Law, Regulatory Authority, and Rules
12.2 Amendment
12.3 No Third-Party Beneficiaries
12.4 Waiver
12.5 Entire Agreement
12.6 Multiple Counterparts
12.7 No Partnership
12.8 Severability
12.9 Security Arrangements
12.10 Environmental Releases
12.11 Subcontractors
12.12 CPUC Modification
12.13 Review of Records and Data

Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process

Article 13. Notices

13.1 General
13.2 Billing and Payment
13.3 Alternative Forms of Notice
13.4 Designated Operating Representative
13.5 Changes to the Notice Information

Article 14. Signatures

Attachment 1 - Glossary of Terms

Attachment 2 - Description and Costs of the Generating Facility, Interconnection Facilities, and Metering Equipment

Attachment 3 - One-line Diagram Depicting the Generating Facility, Interconnection Facilities, Metering Equipment, and Upgrades

Attachment 4 – Milestones

Attachment 5 - Additional Operating Requirements for the Distribution Provider's Distribution System and Affected Systems Needed to Support the Interconnection Customer's Needs

Attachment 6 - Distribution Provider's Description of its Upgrades and Cost Responsibility

Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process

This Interconnection Agreement ("Agreement" or "GIA") is made and entered into this _____ day of _____, 20__, by _____ ("Distribution Provider"), and _____ ("Interconnection Customer") each hereinafter sometimes referred to individually as "Party" or both referred to collectively as the "Parties."

Distribution Provider Information

Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State: _____ Zip: _____
Phone: _____ Fax: _____

Interconnection Customer Information

Interconnection Customer: _____
Attention: _____
Address: _____
City: _____ State: _____ Zip: _____
Phone: _____ Fax: _____

Interconnection Customer Application No: _____

WHEREAS, Interconnection Customer proposes to interconnect to the Distribution System;

WHEREAS, the basis for the Parties entering into this Agreement is that Interconnection Customer is a Qualifying Facility ("QF") and will sell all of its exports to the grid to the Distribution Provider under a power purchase agreement ("PPA") entered into pursuant to the Public Utility Regulatory Policies Act of 1978 ("PURPA"); or

WHEREAS, the basis for the Parties entering into this Agreement is:

_____
(Insert Description or N/A)

THEREFORE, in consideration of the mutual covenants set forth herein, the Parties agree as follows:

Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process

Article 1. Scope and Limitations of Agreement

1.1 Applicability

This Agreement shall be used for an interconnection governed by the Distribution Provider's California Public Utilities Commission-("CPUC") approved Electric Rule 21 ("Rule 21") of a Generating Facility that sells all of its exports to the grid to the Distribution Provider. This Agreement is not applicable to NEM Producers, Non-Export Producers and non-compensated exporting Producers.

1.2 Purpose

This Agreement incorporates in its entirety the Distribution Provider's California Public Utilities Commission ("CPUC") approved Electric Rule 21 ("Rule 21"), subject to any modifications the CPUC may direct in the exercise of its jurisdiction. This Agreement governs the terms and conditions under which the Interconnection Customer's Generating Facility will interconnect with, and operate in parallel with, the Distribution Provider's Distribution System. In the event of inconsistency between this Agreement and the terms of Rule 21, the provisions of the latter shall control.

1.3 No Agreement to Purchase of Deliver Power

This Agreement does not constitute an agreement to purchase or deliver the Interconnection Customer's power. The purchase or delivery of power and other services that the Interconnection Customer may require will be covered under separate agreements, if any. The Interconnection Customer will be responsible for separately making all necessary arrangements (including scheduling) for delivery of electricity.

1.4 Limitations

Nothing in this Agreement is intended to affect any other agreement between the Distribution Provider and the Interconnection Customer.

1.5 Responsibilities of the Parties

1.5.1 The Parties shall perform all obligations of this Agreement in accordance with all Applicable Laws and Regulations, Operating Requirements, and Good Utility Practice.

1.5.2 The Interconnection Customer shall construct, interconnect, operate and maintain its Generating Facility and construct, operate, and maintain its Interconnection Facilities in accordance with the applicable manufacturer's recommended maintenance schedule, and in accordance with this Agreement, and with Good Utility Practice.

1.5.3 The Distribution Provider shall construct, operate, and maintain its Distribution System, Transmission System, Interconnection Facilities, Distribution Upgrades and Network Upgrades in accordance with this Agreement, and with Good Utility

Practice.

1.5.4 The Interconnection Customer agrees to construct its facilities or systems in accordance with applicable specifications that meet or exceed those provided by the National Electrical Safety Code, the American National Standards Institute, IEEE, Underwriter's Laboratory, and Operating Requirements in effect at the time of construction and other applicable national and state codes and standards. The Interconnection Customer agrees to design, install, maintain, and operate its Generating Facility so as to reasonably minimize the likelihood of a disturbance adversely affecting or impairing the system or equipment of the Distribution Provider and any Affected Systems. The Interconnection Customer shall comply with the Distribution Provider's Interconnection Handbook. In the event of a conflict between the terms of this GIA and the terms of the Distribution Provider's Interconnection Handbook, the terms in this GIA shall govern.

1.5.5 Each Party shall operate, maintain, repair, and inspect, and shall be fully responsible for the facilities that it now or subsequently may own unless otherwise specified in the Attachments to this Agreement. Each Party shall be responsible for the safe installation, maintenance, repair and condition of their respective lines and appurtenances on their respective sides of the point of change of ownership. The Distribution Provider and the Interconnection Customer, as appropriate, shall provide Interconnection Facilities that adequately protect the Distribution Provider's Transmission System, Distribution System, personnel, and other persons from damage and injury. The allocation of responsibility for the design, installation, operation, maintenance and ownership of Interconnection Facilities shall be delineated in the Attachments to this Agreement.

1.5.6 The Distribution Provider shall coordinate with Affected Systems to support the interconnection.

1.5.7 The Interconnection Customer shall maintain QF status during the term of this Agreement.

1.6 Parallel Operation Obligations

Once the Generating Facility has been authorized to commence parallel operation, the Interconnection Customer shall abide by all rules and procedures pertaining to the parallel operation of the Generating Facility in the applicable balancing authority area, including, but not limited to; 1) the rules and procedures concerning the operation of generation set forth in Rule 21 or by the applicable system operator(s) for the Distribution Provider's Distribution System and; 2) the Operating Requirements set forth in Attachment 5 of this Agreement.

1.7 Metering

The Interconnection Customer shall be responsible for the Distribution Provider's

reasonable and necessary cost for the purchase, installation, operation, maintenance, testing, repair, and replacement of metering and data acquisition equipment specified in Attachments 2 and 3 of this Agreement. The Interconnection Customer's metering (and data acquisition, as required) equipment shall conform to applicable industry rules and Operating Requirements. Nothing in this provision replaces or alters the metering requirements in the Interconnection Customer's PPA.

1.8 Reactive Power

1.8.1 The Interconnection Customer shall design its Generating Facility to maintain a composite power delivery at continuous rated power output at the Point of Interconnection and the Generating Facility shall be capable of operating within a power factor range of 0.9 leading to 0.9 lagging, unless the Distribution Provider has established different requirements that apply to all similarly situated generators in the balancing authority area on a comparable basis. 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 Distribution Provider. The Interconnection Customer shall notify Distribution Provider if it is using the Generating Facility for power factor correction. Unless otherwise agreed upon by the Interconnection Customer and Distribution Provider, Generating Facilities shall automatically regulate power factor, not voltage, while operating in parallel with Distribution Provider's Distribution System.

1.9 Capitalized Terms

Capitalized Terms used herein shall have the meanings specified in the Glossary of Terms in Attachment 1 or the body of this Agreement.

Article 2. Inspection, Testing, Authorization, and Right of Access

2.1 Equipment Testing and Inspection

2.1.1 Pursuant to Rule 21, the Interconnection Customer shall test and inspect its Generating Facility and Interconnection Facilities prior to interconnection. The Interconnection Customer shall notify the Distribution Provider of such activities no fewer than five Business Days (or as may be agreed to by the Parties) prior to such testing and inspection. Testing and inspection shall occur on a Business Day. The Distribution Provider may, at its own expense, send qualified personnel to the Generating Facility site to inspect the interconnection and observe the testing. The Interconnection Customer shall provide the Distribution Provider a written test report when such testing and inspection is completed.

2.1.2 The Distribution Provider shall provide the Interconnection Customer written acknowledgment that it has received the Interconnection Customer's written test report. Such written acknowledgment shall not be deemed to be or construed as any representation, assurance, guarantee, or warranty by the Distribution Provider of the safety, durability, suitability, or reliability of the Generating Facility or any associated control, protective, and safety devices owned or controlled by the Interconnection Customer or the quality of power produced by the Generating Facility.

2.2 Authorization Required Prior to Parallel Operation

2.2.1 The Distribution Provider shall use Reasonable Efforts to list applicable parallel operation requirements in Attachment 5 of this Agreement. Additionally, the Distribution Provider shall notify the Interconnection Customer of any changes to these requirements as soon as they are known. The Distribution Provider shall make Reasonable Efforts to cooperate with the Interconnection Customer in meeting requirements necessary for the Interconnection Customer to commence parallel operations by the in-service date.

2.2.2 The Interconnection Customer shall not operate its Generating Facility in parallel with the Distribution Provider's Distribution System without prior written authorization of the Distribution Provider. The Distribution Provider will provide such authorization once the Distribution Provider receives notification that the Interconnection Customer has complied with all applicable parallel operation requirements. Such authorization shall not be unreasonably withheld, conditioned, or delayed.

2.3 Right of Access

2.3.1 Upon reasonable notice, the Distribution Provider may send a qualified person to the premises of the Interconnection Customer at or immediately before the time the Generating Facility first operates in parallel to inspect the interconnection, and observe the commissioning of the Generating Facility (including any required testing), startup, and operation for a period of up to three (3) Business Days after initial start-up of the unit. In addition, the Interconnection Customer shall notify the Distribution Provider at least five (5) Business Days prior to conducting any on-site verification testing of the Generating Facility.

2.3.2 Following the initial inspection process described above, at reasonable hours, and upon reasonable notice, or at any time without notice in the event of an emergency or hazardous condition, the Distribution Provider shall have access to the Interconnection Customer's premises for any reasonable purpose in connection with the performance of the obligations imposed on it by this Agreement or if necessary to meet its legal obligation to provide service to its customers.

2.3.3 Costs associated with this Article are subject to the relevant provisions of Rule 21.

Article 3. Effective Date, Term, Termination, and Disconnection

3.1 Effective Date
This Agreement shall become effective upon execution by the Parties.

3.2 Term of Agreement
This Agreement shall become effective on the Effective Date and shall remain in effect for a period of _____years from the Effective Date or such other longer period as the Parties may agree and shall be automatically renewed for each successive one-year period thereafter, unless terminated earlier in accordance with article 3.3 of this Agreement.

3.3 Termination
No termination shall become effective until the Parties have complied with all Applicable Laws and Regulations applicable to such termination.

3.3.1 The Interconnection Customer may terminate this Agreement at any time by giving the Distribution Provider twenty (20) Business Days written notice.

3.3.2 Either Party may terminate this Agreement after Default pursuant to article 7.6.

3.3.3 In addition, if the basis for Rule 21 applicability for this interconnection is based on the Interconnection Customer maintaining QF status and selling all its exports to the grid to Distribution Provider under a PURPA PPA, then this provision applies and Distribution Provider may terminate this Agreement if Interconnection Customer fails to maintain its QF status for the term of this Agreement or upon termination of Interconnection Customer's PURPA PPA.

3.3.3.1 If Section 3.3.3 applies, Interconnection Customer is responsible for maintaining QF status and must notify Distribution Provider sixty (60) Calendar Days in advance of Interconnection Customer failing to maintain its QF status, selling to a third-party, or termination of its PURPA PPA. If Interconnection Customer fails to provide such notice, it is wholly responsible for any penalties incurred from any Governmental Authority or the California Independent System Operator Corporation ("CAISO"), including penalties and charges incurred by the Distribution Provider, as a result of this failure to notify the Distribution Provider.

3.3.3.2 If Interconnection Customer is no longer eligible for a Rule 21 interconnection then Distribution Provider may terminate this Agreement.

3.3.4 Upon termination of this Agreement, the Generating Facility will be disconnected from the Distribution Provider's Distribution System. All costs required to effectuate such disconnection shall be borne by the terminating Party, unless such termination resulted from the non-terminating Party's Default of this GIA or such non-terminating Party otherwise is responsible for these costs under this GIA.

3.3.5 The termination of this Agreement shall not relieve either Party of its liabilities and obligations, owed or continuing at the time of the termination.

3.3.6 This provisions of this article shall survive termination or expiration of this Agreement.

3.3.7 If the Generating Facility no longer falls within the scope and description provided in Section 1.1 of this Agreement, this Agreement is terminated.

3.4 Temporary Disconnection

Temporary disconnection shall continue only for so long as reasonably necessary under Good Utility Practice.

3.4.1 Emergency Conditions -- "Emergency Condition" shall mean a condition or situation: (1) that in the judgment of the Party making the claim is imminently likely to endanger life or property; or (2) that, in the case of the Distribution Provider, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to the Distribution System, the Distribution Provider's Interconnection Facilities or any Affected Systems(s); or (3) that, in the case of the Interconnection Customer, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to, the Generating Facility or the Interconnection Customer's Interconnection Facilities. Under Emergency Conditions, the Distribution Provider may immediately suspend interconnection service and temporarily disconnect the Generating Facility. The Distribution Provider shall notify the Interconnection Customer promptly when it becomes aware of an Emergency Condition that may reasonably be expected to affect the Interconnection Customer's operation of the Generating Facility. The Interconnection Customer shall notify the Distribution Provider promptly when it becomes aware of an Emergency Condition that may reasonably be expected to affect the Distribution Provider's Distribution System or any Affected Systems. To the extent information is known, the notification shall describe the Emergency Condition, the extent of the damage or deficiency, the expected effect on the operation of both Parties' facilities and operations, its anticipated duration, and the necessary corrective action.

3.4.2 Routine Maintenance, Construction, and Repair

The Distribution Provider may interrupt interconnection service or curtail the

output of the Generating Facility and temporarily disconnect the Generating Facility from the Distribution Provider's Distribution System when necessary for routine maintenance, construction, and repairs on the Distribution Provider's Distribution System and/or Transmission System. The Distribution Provider shall provide the Interconnection Customer with five Business Days notice prior to such interruption. The Distribution Provider shall use Reasonable Efforts to coordinate such reduction or temporary disconnection with the Interconnection Customer.

3.4.3 Forced Outages

During any forced outage, the Distribution Provider may suspend interconnection service to effect immediate repairs on the Distribution Provider's Distribution System and/or Transmission System. The Distribution Provider shall use Reasonable Efforts to provide the Interconnection Customer with prior notice. If prior notice is not given, the Distribution Provider shall, upon request, provide the Interconnection Customer written documentation after the fact explaining the circumstances of the disconnection.

3.4.4 Adverse Operating Effects

The Distribution Provider shall notify the Interconnection Customer as soon as practicable if, based on Good Utility Practice, operation of the Generating Facility may cause disruption or deterioration of service to other customers served from the same electric system, or if operating the Generating Facility could cause damage to the Distribution Provider's Distribution System or Affected Systems. Supporting documentation used to reach the decision to disconnect shall be provided to the Interconnection Customer upon request. If, after notice, the Interconnection Customer fails to remedy the adverse operating effect within a reasonable time, the Distribution Provider may disconnect the Generating Facility. The Distribution Provider shall provide the Interconnection Customer with five Business Day notice of such disconnection, unless the provisions of article 3.4.1 apply.

3.4.5 Modification of the Generating Facility

The Interconnection Customer must receive written authorization from the Distribution Provider before making any change to the Generating Facility that may have a material impact on the safety or reliability of the Distribution System and/or the Transmission System. Such authorization shall not be unreasonably withheld. Modifications shall be done in accordance with Good Utility Practice. If the Interconnection Customer makes such modification without the Distribution Provider's prior written authorization, the latter shall have the right to temporarily disconnect the Generating Facility.

3.4.6 Reconnection

The Parties shall cooperate with each other to restore the Generating Facility,

Interconnection Facilities, and the Distribution Provider's Distribution System and/or Transmission System to their normal operating state as soon as reasonably practicable following a temporary disconnection.

Article 4. Cost Responsibility for Interconnection Facilities and Distribution Upgrades

4.1 Interconnection Facilities

4.1.1 The Interconnection Customer shall pay for the cost of the Interconnection Facilities itemized in Attachment 2 of this Agreement. The Distribution Provider shall provide a best estimate cost, including overheads, for the purchase and construction of its Interconnection Facilities and provide a detailed itemization of such costs. Costs associated with Interconnection Facilities may be shared with other entities that may benefit from such facilities by agreement of the Interconnection Customer, such other entities, and the Distribution Provider.

4.1.2 The Interconnection Customer shall be responsible for its share of all reasonable expenses, including overheads, associated with (1) owning, operating, maintaining, repairing, and replacing its own Interconnection Facilities, and (2) operating, maintaining, repairing, and replacing the Distribution Provider's Interconnection Facilities.

4.2 Distribution Upgrades

The Distribution Provider shall design, procure, construct, install, and own the Distribution Upgrades described in Attachment 6 of this Agreement. If the Distribution Provider and the Interconnection Customer agree, the Interconnection Customer may construct Distribution Upgrades that are located on land owned by the Interconnection Customer. The actual cost of the Distribution Upgrades, including overheads, shall be directly assigned to the Interconnection Customer.

Article 5. Cost Responsibility for Network Upgrades

5.1 Applicability

No portion of this Article 5 shall apply unless the interconnection of the Generating Facility requires Network Upgrades.

5.2 Network Upgrades

The Distribution Provider or the Distribution Owner shall design, procure, construct, install, and own the Network Upgrades described in Attachment 6 of this Agreement. If the Distribution Provider and the Interconnection Customer agree, the Interconnection

Customer may construct Network Upgrades that are located on land owned by the Interconnection Customer. Unless the Distribution Provider elects to pay for Network Upgrades, the actual cost of the Network Upgrades, including overheads, shall be borne by the Interconnection Customer unless Section 5.2.1 directs otherwise.

5.2.1 Repayment of Amounts Advanced for Network Upgrades

To the extent that the CAISO Tariff, currently Section 12.3.2 of Appendix Y, provides for cash repayment to interconnection customers for contribution to the cost of Network Upgrades, the Interconnection Customer shall be entitled to a cash repayment, equal to the total amount paid to the Distribution Provider and Affected System operator, if any, for Network Upgrades, including any tax gross-up or other tax-related payments associated with the Network Upgrades, and not otherwise refunded to the Interconnection Customer, to be paid to the Interconnection Customer on a dollar-for-dollar basis for the non-usage sensitive portion of transmission charges, as payments are made under the Distribution Provider's Tariff and Affected System's Tariff for transmission services with respect to the Generating Facility. Any repayment shall include interest calculated in accordance with the methodology set forth in FERC's regulations at 18 C.F.R. §35.19a(a)(2)(iii) from the date of any payment for Network Upgrades through the date on which the Interconnection Customer receives a repayment of such payment pursuant to this subparagraph. The Interconnection Customer may assign such repayment rights to any person. To the extent that the CAISO Tariff does not provide for cash repayment to interconnection customers for contribution to the cost of Network Upgrades, Interconnection Customer is not entitled to a cash repayment for amounts paid to the Distribution Provider and Affected System operator for Network Upgrades, and no cash repayment shall be made pursuant to this Agreement.

5.2.1.1 If the Interconnection Customer is entitled to a cash repayment pursuant to Article 5.2.1, the Interconnection Customer, the Distribution Provider, and any applicable Affected System operators may adopt any alternative payment schedule that is mutually agreeable so long as the Distribution Provider and said Affected System operators take one of the following actions no later than five years from the Commercial Operation Date: (1) return to the Interconnection Customer any amounts advanced for Network Upgrades not previously repaid, or (2) declare in writing that the Distribution Provider or any applicable Affected System operators will continue to provide payments to the Interconnection Customer on a dollar-for-dollar basis for the non-usage sensitive portion of transmission charges, or develop an alternative schedule that is mutually agreeable and provides for the return of all amounts advanced for Network Upgrades not previously repaid; however, full reimbursement shall not extend beyond twenty (20) years from the commercial operation date.

5.2.1.2 If the Generating Facility fails to achieve commercial operation, but it or another generating facility is later constructed and requires use of the Network Upgrades, the Distribution Provider and Affected System operator shall at that time reimburse the Interconnection Customer for the amounts advanced for the Network Upgrades if the Interconnection Customer is entitled to a cash repayment pursuant to Article 5.2.1. Before any such reimbursement can occur, the Interconnection Customer, or the entity that ultimately constructs the generating facility, if different, is responsible for identifying the entity to which reimbursement must be made.

5.3 [Intentionally Omitted]

5.4 Rights Under Other Agreements

Notwithstanding any other provision of this Agreement, nothing herein shall be construed as relinquishing or foreclosing any rights, including but not limited to firm transmission rights, capacity rights, transmission congestion rights, or transmission credits, that the Interconnection Customer shall be entitled to, now or in the future, under any other agreement or tariff as a result of, or otherwise associated with, the transmission capacity, if any, created by the Network Upgrades, including the right to obtain cash reimbursements or transmission credits for transmission service that is not associated with the Generating Facility.

Article 6. Billing, Payment, Milestones, and Financial Security

6.1 Billing and Payment Procedures and Final Accounting

6.1.1 The Distribution Provider shall bill the Interconnection Customer for the design, engineering, construction, and procurement costs, including any applicable taxes, of Interconnection Facilities and Upgrades contemplated by this Agreement on a monthly basis, or as otherwise agreed by the Parties. The Interconnection Customer shall pay each bill within 30 calendar days of receipt, or as otherwise agreed to by the Parties.

6.1.2 Within three months of completing the construction and installation of the Distribution Provider's Interconnection Facilities and/or Upgrades described in the Attachments to this Agreement, the Distribution Provider shall provide the Interconnection Customer with a final accounting report of any difference between (1) the Interconnection Customer's cost responsibility for the actual cost of such facilities or Upgrades, and (2) the Interconnection Customer's previous aggregate payments to the Distribution Provider for such facilities or Upgrades. If the Interconnection Customer's cost responsibility exceeds its previous aggregate payments, the Distribution Provider shall invoice the Interconnection

Customer for the amount due and the Interconnection Customer shall make payment to the Distribution Provider within 30 calendar days. If the Interconnection Customer's previous aggregate payments exceed its cost responsibility under this Agreement, the Distribution Provider shall refund to the Interconnection Customer an amount equal to the difference within 30 calendar days of the final accounting report.

6.2 Milestones

The Parties shall agree on milestones for which each Party is responsible and list them in Attachment 4 of this Agreement. A Party's obligations under this provision may be extended by agreement. If a Party anticipates that it will be unable to meet a milestone for any reason other than a Uncontrollable Force Event, it shall immediately notify the other Party of the reason(s) for not meeting the milestone and (1) propose the earliest reasonable alternate date by which it can attain this and future milestones, and (2) requesting appropriate amendments to Attachment 4. The Party affected by the failure to meet a milestone shall not unreasonably withhold agreement to such an amendment unless it will suffer significant uncompensated economic or operational harm from the delay, (2) attainment of the same milestone has previously been delayed, or (3) it has reason to believe that the delay in meeting the milestone is intentional or unwarranted notwithstanding the circumstances explained by the Party proposing the amendment.

6.3 Financial Security Arrangements

At least 20 Business Days prior to the commencement of the design, procurement, installation, or construction of a discrete portion of the Distribution Provider's Interconnection Facilities and Upgrades, the Interconnection Customer shall provide the Distribution Provider, at the Interconnection Customer's option, a guarantee, a surety bond, letter of credit or other form of security that is reasonably acceptable to the Distribution Provider and is consistent with the Uniform Commercial Code of the jurisdiction where the Point of Interconnection is located. Such security for payment shall be in an amount sufficient to cover the costs for constructing, designing, procuring, and installing the applicable portion of the Distribution Provider's Interconnection Facilities and Upgrades and shall be reduced on a dollar-for-dollar basis for payments made to the Distribution Provider under this Agreement during its term. In addition:

6.3.1 The guarantee must be made by an entity that meets the creditworthiness requirements of the Distribution Provider, and contain terms and conditions that guarantee payment of any amount that may be due from the Interconnection Customer, up to an agreed-to maximum amount.

6.3.2 The letter of credit or surety bond must be issued by a financial institution or insurer reasonably acceptable to the Distribution Provider and must specify a reasonable expiration date.

Article 7. Assignment, Liability, Indemnity, Uncontrollable Force, Consequential Damages, and Default

7.1 Assignment

This Agreement may be assigned by either Party upon fifteen (15) Business Days prior written notice and opportunity to object by the other Party; provided that:

7.1.1 Either Party may assign this Agreement without the consent of the other Party to any affiliate of the assigning Party with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Agreement, provided that the Interconnection Customer promptly notifies the Distribution Provider of any such assignment;

7.1.2 The Interconnection Customer shall have the right to assign this Agreement, without the consent of the Distribution Provider, for collateral security purposes to aid in providing financing for the Generating Facility, provided that the Interconnection Customer will promptly notify the Distribution Provider of any such assignment.

7.1.3 Any attempted assignment that violates this article is void and ineffective. Assignment shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. An assignee is responsible for meeting the same financial, credit, and insurance obligations as the Interconnection Customer. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.

7.2 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, except as authorized by this Agreement.

7.3 Indemnity

7.3.1 This provision protects each Party from liability incurred to third parties as a result of carrying out the provisions of this Agreement. Liability under this provision is exempt from the general limitations on liability found in article 7.2.

7.3.2 The Parties shall at all times indemnify, defend, and hold the other Party harmless from, any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to

third parties, arising out of or resulting from the other Party's action or failure to meet its obligations under this Agreement on behalf of the indemnifying Party, except in cases of gross negligence or intentional wrongdoing by the indemnified Party.

7.3.3 If an indemnified person is entitled to indemnification under this article as a result of a claim by a third party, and the indemnifying Party fails, after notice and reasonable opportunity to proceed under this article, to assume the defense of such claim, such indemnified person may at the expense of the indemnifying Party contest, settle or consent to the entry of any judgment with respect to, or pay in full, such claim.

7.3.4 If an indemnifying party is obligated to indemnify and hold any indemnified person harmless under this article, the amount owing to the indemnified person shall be the amount of such indemnified person's actual loss, net of any insurance or other recovery.

7.3.5 Promptly after receipt by an indemnified person of any claim or notice of the commencement of any action or administrative or legal proceeding or investigation as to which the indemnity provided for in this article may apply, the indemnified person shall notify the indemnifying party of such fact. Any failure of or delay in such notification shall not affect a Party's indemnification obligation unless such failure or delay is materially prejudicial to the indemnifying party.

7.4 Consequential Damages

Other than as expressly provided for in this Agreement, neither Party shall be liable under any provision of this Agreement for any losses, damages, costs or expenses for any special, indirect, incidental, consequential, or punitive damages, including but not limited to loss of profit or revenue, loss of the use of equipment, cost of capital, cost of temporary equipment or services, whether based in whole or in part in contract, in tort, including negligence, strict liability, or any other theory of liability; provided, however, that damages for which a Party may be liable to the other Party under another agreement will not be considered to be special, indirect, incidental, or consequential damages hereunder.

7.5 Uncontrollable Force

7.5.1 As used in this article, an Uncontrollable Force Event shall mean "any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm, flood, earthquake, explosion, breakage or accident to machinery or equipment, any curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond the reasonable control of the Distribution Provider or Interconnection Customer

which could not be avoided through the exercise of Good Utility Practice. An Uncontrollable Force Event does not include an act of negligence or intentional wrongdoing by the Party claiming Uncontrollable Force."

7.5.2 If an Uncontrollable Force Event prevents a Party from fulfilling any obligations under this Agreement, the Party affected by the Uncontrollable Force Event (Affected Party) shall promptly notify the other Party, either in writing or via the telephone, of the existence of the Uncontrollable Force Event. The notification must specify in reasonable detail the circumstances of the Uncontrollable Force Event, its expected duration, and the steps that the Affected Party is taking to mitigate the effects of the event on its performance. The Affected Party shall keep the other Party informed on a continuing basis of developments relating to the Uncontrollable Force Event until the event ends. The Affected Party will be entitled to suspend or modify its performance of obligations under this Agreement (other than the obligation to make payments) only to the extent that the effect of the Uncontrollable Force Event cannot be mitigated by the use of Reasonable Efforts. The Affected Party will use Reasonable Efforts to resume its performance as soon as possible.

7.6 Default

7.6.1 No Default shall exist where such failure to discharge an obligation (other than the payment of money) is the result of an Uncontrollable Force Event as defined in this Agreement or the result of an act or omission of the other Party. Upon a Default, the non-defaulting Party shall give written notice of such Default to the defaulting Party. Except as provided in article 7.6.2, the defaulting Party shall have 60 calendar days from receipt of the Default notice within which to cure such Default; provided however, if such Default is not capable of cure within 60 calendar days, the defaulting Party shall commence such cure within 20 calendar days after notice and continuously and diligently complete such cure within six months from receipt of the Default notice; and, if cured within such time, the Default specified in such notice shall cease to exist.

7.6.2 If a Default is not cured as provided in this article, or if a Default is not capable of being cured within the period provided for herein, the non-defaulting Party shall have the right to terminate this Agreement by written notice at any time until cure occurs, and be relieved of any further obligation hereunder and, whether or not that Party terminates this Agreement, to recover from the defaulting Party all amounts due hereunder, plus all other damages and remedies to which it is entitled at law or in equity. The provisions of this article will survive termination of this Agreement.

Article 8. Insurance

8.1 General Liability and Additional Insurance
The Interconnection Customer shall, at its own expense, maintain in force general liability insurance without any exclusion for liabilities related to the interconnection undertaken pursuant to this Agreement. The amount of such insurance shall be sufficient to insure against all reasonably foreseeable direct liabilities given the size and nature of the generating equipment being interconnected, the interconnection itself, and the characteristics of the system to which the interconnection is made. The Interconnection Customer shall obtain additional insurance only if necessary as a function of owning and operating a generating facility. Such insurance shall be obtained from an insurance provider authorized to do business in California. Certification that such insurance is in effect shall be provided upon request of the Distribution Provider, except that the Interconnection Customer shall show proof of insurance to the Distribution Provider no later than ten (10) Business Days prior to the anticipated Parallel Operation date. An Interconnection Customer of sufficient credit-worthiness may propose to self-insure for such liabilities, and such a proposal shall not be unreasonably rejected.

8.2 Maintenance of Insurance
The Distribution Provider agrees to maintain general liability insurance or self-insurance consistent with the Distribution Provider's commercial practice. Such insurance or self-insurance shall not exclude coverage for the Distribution Provider's liabilities undertaken pursuant to this Agreement.

8.3 Notification
The Parties further agree to notify each other whenever an accident or incident occurs resulting in any injuries or damages that are included within the scope of coverage of such insurance, whether or not such coverage is sought.

Article 9. Confidentiality

9.1 Definition of Confidential Information
The confidentiality provisions applicable to this Agreement are set forth in Section D.7, Confidentiality of Rule 21 and in the following provisions included in this Article.

9.1.1 Release of Confidential Information

Neither Party shall release or disclose Confidential Information to any other person, employees, consultants, or to parties who may be or considering providing financing to or equity participation with Interconnection Customer, or to potential purchasers or assignees of Interconnection Customer, on a need-to-know basis in connection with these procedures, unless such person has first been advised of the confidentiality provisions of this Article and has agreed to comply

with such provisions. Notwithstanding the foregoing, a Party providing Confidential Information to any person shall remain primarily responsible for any release of Confidential Information in contravention of this Article.

9.1.2 Rights

Each Party retains all rights, title, and interest in the Confidential Information that each Party discloses to the other Party. The disclosure by each Party to the other Party of Confidential Information shall not be deemed a waiver by either Party or any other person or entity of the right to protect the Confidential Information from public disclosure.

9.1.3 No Warranties

By providing Confidential Information, neither Party makes any warranties or representations as to its accuracy or completeness. In addition, by supplying Confidential Information, neither Party obligates itself to provide any particular information or Confidential Information to the other Party nor to enter into any further agreements or proceed with any other relationship or joint venture.

9.1.4 Standard of Care

Each Party shall use at least the same standard of care to protect Confidential Information it receives as it uses to protect its own Confidential Information from unauthorized disclosure, publication or dissemination; however, in no case shall a Party use less than reasonable care in protecting Confidential Information. Each Party may use Confidential Information solely to fulfill its obligations to the other Party under this Agreement or its regulatory requirements.

9.1.5 Order of Disclosure

If a court or a Government Authority or entity with the right, power, and apparent authority to do so requests or requires either Party, by subpoena, oral deposition, interrogatories, requests for production of documents, administrative order, or otherwise, to disclose Confidential Information, that Party shall provide the other Party with prompt notice of such request(s) or requirement(s) so that the other Party may seek an appropriate protective order or waive compliance. Notwithstanding the absence of a protective order or waiver, the Party may disclose such Confidential Information which, in the opinion of its counsel, the Party is legally compelled to disclose. Each Party will use Reasonable Efforts to obtain reliable assurance that confidential treatment will be accorded any Confidential Information so furnished.

9.1.6 Remedies

The Parties agree that monetary damages would be inadequate to compensate a Party for the other Party's Breach of its obligations under this Article. Each Party accordingly agrees that the other Party shall be entitled to equitable relief, by way of injunction or otherwise, if the first Party Breaches or threatens to Breach its obligations under this Article, which equitable relief shall be granted without bond or proof of damages, and the receiving Party shall not plead in defense that there would be an adequate remedy at law. Such remedy shall not be deemed an exclusive remedy for the Breach of this Article, but shall be in addition to all other remedies available at law or in equity. The Parties further acknowledge and agree that the covenants contained herein are necessary for the protection of legitimate business interests and are reasonable in scope. No Party, however, shall be liable for indirect, incidental, or consequential or punitive damages of any nature or kind resulting from or arising in connection with this Article..

Article 10. Disputes

10.1 Dispute Resolution
Any dispute arising between the Parties regarding a Party's performance of its obligations under this Agreement or requirements related to the interconnection of the Generating Facility shall be resolved according to the procedures in Rule 21..

Article 11. Taxes

11.1 Applicable Tax Laws and Regulation
The Parties agree to follow all applicable tax laws and regulations, consistent with CPUC policy and Internal Revenue Service requirements.

11.2 Maintenance of Tax Status
Each Party shall cooperate with the other to maintain the other Party's tax status. Nothing in this Agreement is intended to adversely affect the Distribution Provider's tax exempt status with respect to the issuance of bonds including, but not limited to, local furnishing bonds.

Article 12. Miscellaneous

12.1 Governing Law, Regulatory Authority, and Rules
The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of California (where the Point of Interconnection is located), without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations. Each Party expressly

reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a Governmental Authority.

12.2 Amendment
The Parties may amend this Agreement by a written instrument duly executed by both Parties.

12.3 No Third-Party Beneficiaries
This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and where permitted, their assigns.

12.4 Waiver

12.4.1 The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.

12.4.2 Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Distribution Provider. Any waiver of this Agreement shall, if requested, be provided in writing.

12.5 Entire Agreement
This Agreement, including all Attachments, and any incorporated tariffs or Rules, constitutes the entire agreement between the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between the Parties with respect to the subject matter of this Agreement. There are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, either Party's compliance with its obligations under this Agreement.

12.6 Multiple Counterparts
This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

12.7 No Partnership
This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have

any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

12.8 Severability

If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.

12.9 Security Arrangements

Infrastructure security of electric system equipment and operations and control hardware and software is essential to ensure day-to-day reliability and operational security. All public utilities are expected to meet basic standards for system infrastructure and operational security, including physical, operational, and cyber-security practices.

12.10 Environmental Releases

Each Party shall notify the other Party, first orally and then in writing, of the release of any hazardous substances, any asbestos or lead abatement activities, or any type of remediation activities related to the Generating Facility or the Interconnection Facilities, each of which may reasonably be expected to affect the other Party. The notifying Party shall (1) provide the notice as soon as practicable, provided such Party makes a good faith effort to provide the notice no later than 24 hours after such Party becomes aware of the occurrence, and (2) promptly furnish to the other Party copies of any publicly available reports filed with any governmental authorities addressing such events.

12.11 Subcontractors

Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Party for the performance of such subcontractor.

12.11.1 The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully responsible to the other Party for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event shall the Distribution Provider be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer under this Agreement. Any applicable obligation imposed by this Agreement upon the hiring Party shall be

equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

12.11.2 The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

12.12 CPUC Modification

Unless otherwise ordered by the CPUC, this Agreement at all times shall be subject to such modifications as the CPUC may direct from time to time in the exercise of its jurisdiction.

12.13 Review of Records and Data

12.13.1 The Distribution Provider shall have the right to review and obtain copies of Interconnection Customer'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 Interconnection Customer's Generating Facility or its interconnection with Distribution Provider's Distribution System.

12.13.2 The Interconnection Customer authorizes the Distribution Provider to release to the California Energy Commission ("CEC"), the CAISO, and/or the CPUC information regarding the Generating Facility, including the Interconnection Customer'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, CAISO's, or CPUC's rules and regulations.

Article 13. Notices

13.1 General

Unless otherwise provided in this Agreement, any written notice, demand, or request required or authorized in connection with this Agreement ("Notice") shall be deemed properly given if delivered in person, delivered by recognized national currier service, or sent by first class mail, postage prepaid, to the person specified below:

If to the Interconnection Customer:

Interconnection Customer: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

If to the Distribution Provider:

Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

13.2 Billing and Payment

Billings and payments shall be sent to the addresses set out below:

Interconnection Customer: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____

Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____

13.3 Alternative Forms of Notice

Any notice or request required or permitted to be given by either Party to the other and not required by this Agreement to be given in writing may be so given by telephone, facsimile or e-mail to the telephone numbers and e-mail addresses set out below:

If to the Interconnection Customer:

Interconnection Customer: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

If to the Distribution Provider:

Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

13.4 Designated Operating Representative

The Parties may also designate operating representatives to conduct the communications which may be necessary or convenient for the administration of this Agreement. This

person will also serve as the point of contact with respect to operations and maintenance of the Party's facilities.

Interconnection Customer's Operating Representative:

Interconnection Customer: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

Distribution Provider's Operating Representative:

Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

13.5 Changes to the Notice Information
Either Party may change this information by giving five Business Days written notice prior to the effective date of the change.

Article 14. Signatures

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective duly authorized representatives.

For the Distribution Provider

Name: _____

Title: _____

Date: _____

For the Interconnection Customer

Name: _____

Title: _____

Date: _____

Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process

Attachment 1

Glossary of Terms

Affected System - An electric system other than the Distribution Provider's Distribution System that may be affected by the proposed interconnection, including but not limited to the Transmission System.

Applicable Laws and Regulations - All duly promulgated applicable federal, state and local laws, regulations, rules, ordinances, codes, decrees, judgments, directives, or judicial or administrative orders, permits and other duly authorized actions of any Governmental Authority.

Business Day - Monday through Friday, excluding Federal and State Holidays.

Default - The failure of a breaching Party to cure its breach under the Agreement.

Distribution Owner - The entity that owns, leases or otherwise possesses an interest in the portion of the Distribution System at the Point of Interconnection and may be a Party to the Agreement to the extent necessary.

Distribution Provider - The public utility (or its designated agent) that owns, controls, or operates transmission or distribution facilities used for the transmission of electricity and provides distribution service to the Interconnection Customer. The term Distribution Provider should be read to include the Distribution Owner when the Distribution Owner is separate from the Distribution Provider.

Distribution System - Those non-CAISO transmission and distribution facilities, owned, controlled and operated by the Distribution Provider that are used to provide distribution service, which facilities and equipment are used to transmit electricity to ultimate usage points such as homes and industries directly from nearby generators or from interchanges with higher voltage transmission networks which transport bulk power over longer distances. The voltage levels at which Distribution Systems operate differ among areas.

Distribution Upgrades - The additions, modifications, and upgrades to the Distribution Provider's Distribution System at or beyond the Point of Interconnection to facilitate interconnection of the Generating Facility. Distribution Upgrades do not include Interconnection Facilities.

Fast Track Process - The interconnection study process set forth in Section F.2 of Rule 21.

Generating Facility -The Interconnection Customer's device for the production or storage of electricity identified in Attachment 2 of the Agreement, but shall not include the Interconnection Customer's Interconnection Facilities.

Good Utility Practice - Any of the practices, methods and acts engaged in or approved by a

significant portion of the electric industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.

Governmental Authority - Any federal, state, local or other governmental regulatory or administrative agency, court, commission, department, board, or other governmental subdivision, legislature, rulemaking board, tribunal, or other governmental authority having jurisdiction over the Parties, their respective facilities, or the respective services they provide, and exercising or entitled to exercise any administrative, executive, police, or taxing authority or power; provided, however, that such term does not include the Interconnection Customer, the Distribution Provider, or any Affiliate thereof.

Interconnection Customer - Any entity, including the Distribution Provider, Distribution Owner or any of the affiliates or subsidiaries of either, that proposes to interconnect its Generating Facility with the Distribution Provider's Distribution System. The definition of "Interconnection Customer" in this Agreement is intended to be identical to and used interchangeably with the definition of "Producer" in Rule 21.

Interconnection Facilities - The Distribution Provider's Interconnection Facilities and the Interconnection Customer's Interconnection Facilities. Collectively, Interconnection Facilities include all facilities and equipment between the Generating Facility and the Point of Interconnection, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Generating Facility to the Distribution Provider's Distribution System. Interconnection Facilities are sole use facilities and shall not include Distribution Upgrades or Network Upgrades.

Interconnection Handbook - A handbook, developed by the Distribution Provider and posted on the Distribution Provider's website or otherwise made available by the Distribution Provider, describing the technical and operational requirements for wholesale generators and loads connected to the Distribution System, as such handbook may be modified or superseded from time to time. In the event of a conflict between the terms of this Agreement and the terms of the Distribution Provider's Interconnection Handbook, the terms in this Agreement shall govern.

Network Upgrades - Additions, modifications, and upgrades to the Distribution Provider's Transmission System required at or beyond the point at which the Distribution System connects to the Distribution Provider's Transmission System to accommodate the interconnection of the Generating Facility to the Distribution Provider's Distribution System. Network Upgrades do not include Distribution Upgrades.

Operating Requirements - Any operating and technical requirements that may be applicable

due to Regional Transmission Organization, the CAISO, balancing authority area, or the Distribution Provider's requirements, including those set forth in the Agreement.

Party or Parties - The Distribution Provider, Distribution Owner, Interconnection Customer, Producer or any combination of the above.

Point of Interconnection - The point where the Interconnection Facilities connect with the Distribution Provider's Distribution System.
Reasonable Efforts - With respect to an action required to be attempted or taken by a Party under the Agreement, efforts that are timely and consistent with Good Utility Practice and are otherwise substantially equivalent to those a Party would use to protect its own interests.

Transmission System - Those facilities owned by the Distribution Provider that have been placed under the CAISO's operational control and are part of the CAISO Grid.

Upgrades - The required additions and modifications to the Distribution Provider's Distribution System and Transmission System at or beyond the Point of Interconnection. Upgrades may be Network Upgrades or Distribution Upgrades. Upgrades do not include Interconnection Facilities.

Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process

Attachment 2

Description and Costs of the Generating Facility, Interconnection Facilities and Metering Equipment

Equipment, including the Generating Facility, Interconnection Facilities, and metering equipment shall be itemized and identified as being owned by the Interconnection Customer, the Distribution Provider, or the Distribution Owner. The Distribution Provider will provide a best estimate itemized cost, including overheads, of its Interconnection Facilities and metering equipment, and a best estimate itemized cost of the annual operation and maintenance expenses associated with its Interconnection Facilities and metering equipment.

Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process

Attachment 3

One-line Diagram Depicting the Generating Facility, Interconnection Facilities, Metering Equipment, and Upgrades

Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process

Attachment 4

Milestones

In-Service Date: _____

Critical milestones and responsibility as agreed to by the Parties:

	Milestone/Date	**Responsible Party**
(1)	_____	_____
(2)	_____	_____
(3)	_____	_____
(4)	_____	_____
(5)	_____	_____
(6)	_____	_____
(7)	_____	_____
(8)	_____	_____
(9)	_____	_____
(10)	_____	_____

Agreed to by:

For the Distribution Provider_____ Date_____

For the Distribution Owner (If Applicable) _____ Date_____

For the Interconnection Customer_____ Date_____

Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process

Attachment 5

Additional Operating Requirements for the Distribution Provider's Distribution System and Affected Systems Needed to Support the Interconnection Customer's Needs

The Distribution Provider shall also provide requirements that must be met by the Interconnection Customer prior to initiating parallel operation with the Distribution Provider's Distribution System.

Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities Interconnecting Under the Fast Track Process

Attachment 6

Distribution Provider's Description of its Upgrades and Cost Responsibility

The Distribution Provider shall describe Upgrades and provide an itemized best estimate of the cost, including overheads, of the Upgrades and annual operation and maintenance expenses associated with such Upgrades. The Distribution Provider shall functionalize Upgrade costs and annual expenses as either transmission or distribution related.

RULE 21 GENERATOR INTERCONNECTION AGREEMENT (GIA) FOR EXPORTING GENERATING FACILITIES INTERCONNECTING UNDER THE FAST TRACK PROCESS

TABLE OF CONTENTS

Article 1. Scope and Limitations of Agreement

1.1 Applicability
1.2 Purpose
1.3 No Agreement to Purchase or Deliver Power
1.4 Limitations
1.5 Responsibilities of the Parties
1.6 Parallel Operation Obligations
1.7 Metering
1.8 Reactive Power
1.9 Capitalized Terms

Article 2. Inspection, Testing, Authorization, and Right of Access

2.1 Equipment Testing and Inspection
2.2 Authorization Required Prior to Parallel Operation.
2.3 Right of Access

Article 3. Effective Date, Term, Termination, and Disconnection

3.1 Effective Date
3.2 Term of Agreement
3.3 Termination
3.4 Temporary Disconnection

Article 4. Cost Responsibility for Interconnection Facilities and Distribution Upgrades

4.1 Interconnection Facilities
4.2 Distribution Upgrades

Article 5. Cost Responsibility for Network Upgrades

5.1 Applicability
5.2 Network Upgrades
5.3 [Intentionally Omitted]
5.4 Rights Under Other Agreements

Article 6. Billing, Payment, Milestones, and Financial Security

6.1 Billing and Payment Procedures and Final Accounting
6.2 Milestones
6.3 Financial Security Arrangements

Article 7. Assignment, Liability, Indemnity, Uncontrollable Force, Consequential Damages, and Default

7.1 Assignment
7.2 Limitation of Liability

7.3 Indemnity
7.4 Consequential Damages
7.5 Uncontrollable Force.
7.6 Default

Article 8. Insurance

8.1 General Liability and Additional Insurance
8.2 Maintenance of Insurance
8.3 Notification

Article 9. Confidentiality

9.1 Definition of Confidential Information

Article 10. Disputes

10.1 Dispute Resolution

Article 11. Taxes

11.1 Applicable Tax Laws and Regulations
11.2 Maintenance of Tax Status

Article 12. Miscellaneous

12.1 Governing Law, Regulatory Authority, and Rules
12.2 Amendment
12.3 No Third-Party Beneficiaries
12.4 Waiver
12.5 Entire Agreement
12.6 Multiple Counterparts
12.7 No Partnership
12.8 Severability
12.9 Security Arrangements
12.10 Environmental Releases
12.11 Subcontractors
12.12 CPUC Modification
12.13 Review of Records and Data

Article 13. Notices

13.1 General
13.2 Billing and Payment
13.3 Alternative Forms of Notice
13.4 Designated Operating Representative
13.5 Changes to the Notice Information

Article 14. Signatures

Attachment 1 - Glossary of Terms
Attachment 2 - Description and Costs of the Generating Facility, Interconnection Facilities, and Metering Equipment

Attachment 3 - One-line Diagram Depicting the Generating Facility, Interconnection Facilities, Metering Equipment, and Upgrades
Attachment 4 - Milestones
Attachment 5 - Additional Operating Requirements for the Distribution Provider's Distribution System and Affected Systems Needed to Support the Interconnection Customer's Needs
Attachment 6 - Distribution Provider's Description of its Upgrades and Cost Responsibility

This Interconnection Agreement ("Agreement"or "GIA") is made and entered into this _____ day of _____, 20__, by _____ ("Distribution Provider"), and _____ ("Interconnection Customer") each hereinafter sometimes referred to individually as "Party" or both referred to collectively as the "Parties."

Distribution Provider Information

Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State: _____ Zip: _____
Phone: _____ Fax: _____

Interconnection Customer Information

Interconnection Customer: _____
Attention: _____
Address: _____
City: _____ State: _____ Zip: _____
Phone: _____ Fax: _____

Interconnection Customer Application No: _____

WHEREAS, Interconnection Customer proposes to interconnect to the Distribution System;

WHEREAS, the basis for the Parties entering into this Agreement is that Interconnection Customer is a Qualifying Facility ("QF") and will sell all of its exports to the grid to the Distribution Provider under a power purchase agreement ("PPA") entered into pursuant to the Public Utility Regulatory Policies Act of 1978 ("PURPA"); or

WHEREAS, the basis for the Parties entering into this Agreement is:
_____(Insert Description or N/A)_____

THEREFORE, in consideration of the mutual covenants set forth herein, the Parties agree as follows:

Article 1. Scope and Limitations of Agreement

1.1 Applicability
This Agreement shall be used for an interconnection governed by the Distribution Provider's California Public Utilities Commission ("CPUC") approved Electric Rule 21 ("Rule 21") of a Generating Facility that sells all of its exports to the grid to the Distribution Provider. This Agreement is not applicable to NEM Producers, Non-Export Producers and non-compensated exporting Producers.

1.2 Purpose
This Agreement incorporates in its entirety the Distribution Provider's Rule 21, subject to any modifications the CPUC may direct in the exercise of its jurisdiction. This Agreement governs the terms and conditions under which the Interconnection Customer's Generating Facility will interconnect with, and operate in parallel with, the Distribution Provider's Distribution System. In the event of inconsistency between this Agreement and the terms of Rule 21, the provisions of the latter shall control.

1.3 No Agreement to Purchase or Deliver Power
This Agreement does not constitute an agreement to purchase or deliver the Interconnection Customer's power. The purchase or delivery of power and other services that the Interconnection Customer may require will be covered under separate agreements, if any. The Interconnection Customer will be responsible for separately making all necessary arrangements (including scheduling) for delivery of electricity.

1.4 Limitations
Nothing in this Agreement is intended to affect any other agreement between the Distribution Provider and the Interconnection Customer.

1.5 Responsibilities of the Parties

1.5.1 The Parties shall perform all obligations of this Agreement in accordance with all Applicable Laws and Regulations, Operating Requirements, and Good Utility Practice.

1.5.2 The Interconnection Customer shall construct, interconnect, operate and maintain its Generating Facility and construct, operate, and maintain its Interconnection Facilities in accordance with the applicable manufacturer's recommended maintenance schedule, and in accordance with this Agreement, and with Good Utility Practice.

1.5.3 The Distribution Provider shall construct, operate, and maintain its Distribution System, Transmission System, Interconnection Facilities, Distribution Upgrades and Network Upgrades in accordance with this Agreement, and with Good Utility Practice.

1.5.4 The Interconnection Customer agrees to construct its facilities or systems in

accordance with applicable specifications that meet or exceed those provided by the National Electrical Safety Code, the American National Standards Institute, IEEE, Underwriter's Laboratory, and Operating Requirements in effect at the time of construction and other applicable national and state codes and standards. The Interconnection Customer agrees to design, install, maintain, and operate its Generating Facility so as to reasonably minimize the likelihood of a disturbance adversely affecting or impairing the system or equipment of the Distribution Provider and any Affected Systems. The Interconnection Customer shall comply with the Distribution Provider's Interconnection Handbook. In the event of a conflict between the terms of this GIA and the terms of the Distribution Provider's Interconnection Handbook, the terms in this GIA shall govern.

1.5.5 Each Party shall operate, maintain, repair, and inspect, and shall be fully responsible for the facilities that it now or subsequently may own unless otherwise specified in the Attachments to this Agreement. Each Party shall be responsible for the safe installation, maintenance, repair and condition of their respective lines and appurtenances on their respective sides of the point of change of ownership. The Distribution Provider and the Interconnection Customer, as appropriate, shall provide Interconnection Facilities that adequately protect the Distribution Provider's Transmission System, Distribution System, personnel, and other persons from damage and injury. The allocation of responsibility for the design, installation, operation, maintenance and ownership of Interconnection Facilities shall be delineated in the Attachments to this Agreement.

1.5.6 The Distribution Provider shall coordinate with Affected Systems to support the interconnection.

1.5.7 The Interconnection Customer shall maintain QF status during the term of this Agreement.

1.6 Parallel Operation Obligations

Once the Generating Facility has been authorized to commence parallel operation, the Interconnection Customer shall abide by all rules and procedures pertaining to the parallel operation of the Generating Facility in the applicable balancing authority area, including, but not limited to; 1) the rules and procedures concerning the operation of generation set forth in Rule 21 or by the applicable system operator(s) for the Distribution Provider's Distribution System and; 2) the Operating Requirements set forth in Attachment 5 of this Agreement.

1.7 Metering

The Interconnection Customer shall be responsible for the Distribution Provider's reasonable and necessary cost for the purchase, installation, operation, maintenance, testing, repair, and replacement of metering and data acquisition equipment specified in Attachments 2 and 3 of this Agreement. The Interconnection Customer's metering (and data acquisition, as required) equipment shall conform to applicable industry rules and Operating Requirements. Nothing in this provision replaces or alters the metering

requirements in the Interconnection Customer's PPA.

1.8 Reactive Power

1.8.1 The Interconnection Customer shall design its Generating Facility to maintain a composite power delivery at continuous rated power output at the Point of Interconnection and the Generating Facility shall be capable of operating within a power factor range of 0.9 leading to 0.9 lagging, unless the Distribution Provider has established different requirements that apply to all similarly situated generators in the balancing authority area on a comparable basis. 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 Distribution Provider. The Interconnection Customer shall notify Distribution Provider if it is using the Generating Facility for power factor correction. Unless otherwise agreed upon by the Interconnection Customer and Distribution Provider, Generating Facilities shall automatically regulate power factor, not voltage, while operating in parallel with Distribution Provider's Distribution System.

1.9 Capitalized Terms

Capitalized terms used herein shall have the meanings specified in the Glossary of Terms in Attachment 1 or the body of this Agreement.

Article 2. Inspection, Testing, Authorization, and Right of Access

2.1 Equipment Testing and Inspection

2.1.1 Pursuant to Rule 21, the Interconnection Customer shall test and inspect its Generating Facility and Interconnection Facilities prior to interconnection. The Interconnection Customer shall notify the Distribution Provider of such activities no fewer than five Business Days (or as may be agreed to by the Parties) prior to such testing and inspection. Testing and inspection shall occur on a Business Day. The Distribution Provider may, at its own expense, send qualified personnel to the Generating Facility site to inspect the interconnection and observe the testing. The Interconnection Customer shall provide the Distribution Provider a written test report when such testing and inspection is completed.

2.1.2 The Distribution Provider shall provide the Interconnection Customer written acknowledgment that it has received the Interconnection Customer's written test report. Such written acknowledgment shall not be deemed to be or construed as any representation, assurance, guarantee, or warranty by the Distribution Provider of the safety, durability, suitability, or reliability of the Generating Facility or any associated control, protective, and safety devices owned or controlled by the Interconnection Customer or the quality of power produced by the Generating

Facility.

2.2 Authorization Required Prior to Parallel Operation

2.2.1 The Distribution Provider shall use Reasonable Efforts to list applicable parallel operation requirements in Attachment 5 of this Agreement. Additionally, the Distribution Provider shall notify the Interconnection Customer of any changes to these requirements as soon as they are known. The Distribution Provider shall make Reasonable Efforts to cooperate with the Interconnection Customer in meeting requirements necessary for the Interconnection Customer to commence parallel operations by the in-service date.

2.2.2 The Interconnection Customer shall not operate its Generating Facility in parallel with the Distribution Provider's Distribution System without prior written authorization of the Distribution Provider. The Distribution Provider will provide such authorization once the Distribution Provider receives notification that the Interconnection Customer has complied with all applicable parallel operation requirements. Such authorization shall not be unreasonably withheld, conditioned, or delayed.

2.3 Right of Access

2.3.1 Upon reasonable notice, the Distribution Provider may send a qualified person to the premises of the Interconnection Customer at or immediately before the time the Generating Facility first operates in parallel to inspect the interconnection, and observe the commissioning of the Generating Facility (including any required testing), startup, and operation for a period of up to three (3) Business Days after initial start-up of the unit. In addition, the Interconnection Customer shall notify the Distribution Provider at least five (5) Business Days prior to conducting any on-site verification testing of the Generating Facility.

2.3.2 Following the initial inspection process described above, at reasonable hours, and upon reasonable notice, or at any time without notice in the event of an emergency or hazardous condition, the Distribution Provider shall have access to the Interconnection Customer's premises for any reasonable purpose in connection with the performance of the obligations imposed on it by this Agreement or if necessary to meet its legal obligation to provide service to its customers.

2.3.3 Costs associated with this Article are subject to the relevant provisions of Rule 21.

Article 3. Effective Date, Term, Termination, and Disconnection

3.1 Effective Date

This Agreement shall become effective upon execution by the Parties.

3.2 Term of Agreement

This Agreement shall become effective on the Effective Date and shall remain in effect for a period of _____years from the Effective Date or such other longer period as the Parties may agree and shall be automatically renewed for each successive one-year period thereafter, unless terminated earlier in accordance with article 3.3 of this Agreement.

3.3 Termination

No termination shall become effective until the Parties have complied with all Applicable Laws and Regulations applicable to such termination.

3.3.1 The Interconnection Customer may terminate this Agreement at any time by giving the Distribution Provider twenty (20) Business Days written notice.

3.3.2 Either Party may terminate this Agreement after Default pursuant to article 7.6.

3.3.3 In addition, if the basis for Rule 21 applicability for this interconnection is based on the Interconnection Customer maintaining QF status and selling all its exports to the grid to Distribution Provider under a PURPA PPA, then this provision applies and Distribution Provider may terminate this Agreement if Interconnection Customer fails to maintain its QF status for the term of this Agreement or upon termination of Interconnection Customer's PURPA PPA.

3.3.3.1 If Section 3.3.3 applies, Interconnection Customer is responsible for maintaining QF status and must notify Distribution Provider sixty (60) Calendar Days in advance of Interconnection Customer failing to maintain its QF status, selling to a third-party, or termination of its PURPA PPA. If Interconnection Customer fails to provide such notice, it is wholly responsible for any penalties incurred from any Governmental Authority or the California Independent System Operator Corporation ("CAISO"), including penalties and charges incurred by the Distribution Provider, as a result of this failure to notify the Distribution Provider.

3.3.3.2 If Interconnection Customer is no longer eligible for a Rule 21 interconnection then Distribution Provider may terminate this Agreement.

3.3.4 Upon termination of this Agreement, the Generating Facility will be disconnected from the Distribution Provider's Distribution System. All costs required to effectuate such disconnection shall be borne by the terminating Party, unless such termination resulted from the non-terminating Party's Default of this GIA or such non-terminating Party otherwise is responsible for these costs under this GIA.

3.3.5 The termination of this Agreement shall not relieve either Party of its liabilities and obligations, owed or continuing at the time of the termination.

3.3.6 This provisions of this article shall survive termination or expiration of this Agreement.

3.3.7 If the Generating Facility no longer falls within the scope and description provided in Section 1.1 of this Agreement, this Agreement is terminated.

3.4 Temporary Disconnection

Temporary disconnection shall continue only for so long as reasonably necessary under Good Utility Practice.

3.4.1 Emergency Conditions -- "Emergency Condition" shall mean a condition or situation: (1) that in the judgment of the Party making the claim is imminently likely to endanger life or property; or (2) that, in the case of the Distribution Provider, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to the Distribution System, the Distribution Provider's Interconnection Facilities or any Affected Systems(s); or (3) that, in the case of the Interconnection Customer, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to, the Generating Facility or the Interconnection Customer's Interconnection Facilities. Under Emergency Conditions, the Distribution Provider may immediately suspend interconnection service and temporarily disconnect the Generating Facility. The Distribution Provider shall notify the Interconnection Customer promptly when it becomes aware of an Emergency Condition that may reasonably be expected to affect the Interconnection Customer's operation of the Generating Facility. The Interconnection Customer shall notify the Distribution Provider promptly when it becomes aware of an Emergency Condition that may reasonably be expected to affect the Distribution Provider's Distribution System or any Affected Systems. To the extent information is known, the notification shall describe the Emergency Condition, the extent of the damage or deficiency, the expected effect on the operation of both Parties' facilities and operations, its anticipated duration, and the necessary corrective action.

3.4.2 Routine Maintenance, Construction, and Repair

The Distribution Provider may interrupt interconnection service or curtail the output of the Generating Facility and temporarily disconnect the Generating Facility from the Distribution Provider's Distribution System when necessary for routine maintenance, construction, and repairs on the Distribution Provider's Distribution System and/or Transmission System. The Distribution Provider shall provide the Interconnection Customer with five Business Days notice prior to such interruption. The Distribution Provider shall use Reasonable Efforts to coordinate such reduction or temporary disconnection with the Interconnection Customer.

3.4.3 Forced Outages

During any forced outage, the Distribution Provider may suspend interconnection

service to effect immediate repairs on the Distribution Provider's Distribution System and/or Transmission System. The Distribution Provider shall use Reasonable Efforts to provide the Interconnection Customer with prior notice. If prior notice is not given, the Distribution Provider shall, upon request, provide the Interconnection Customer written documentation after the fact explaining the circumstances of the disconnection.

3.4.4 Adverse Operating Effects
The Distribution Provider shall notify the Interconnection Customer as soon as practicable if, based on Good Utility Practice, operation of the Generating Facility may cause disruption or deterioration of service to other customers served from the same electric system, or if operating the Generating Facility could cause damage to the Distribution Provider's Distribution System or Affected Systems. Supporting documentation used to reach the decision to disconnect shall be provided to the Interconnection Customer upon request. If, after notice, the Interconnection Customer fails to remedy the adverse operating effect within a reasonable time, the Distribution Provider may disconnect the Generating Facility. The Distribution Provider shall provide the Interconnection Customer with five Business Day notice of such disconnection, unless the provisions of article 3.4.1 apply.

3.4.5 Modification of the Generating Facility
The Interconnection Customer must receive written authorization from the Distribution Provider before making any change to the Generating Facility that may have a material impact on the safety or reliability of the Distribution System and/or the Transmission System. Such authorization shall not be unreasonably withheld. Modifications shall be done in accordance with Good Utility Practice. If the Interconnection Customer makes such modification without the Distribution Provider's prior written authorization, the latter shall have the right to temporarily disconnect the Generating Facility.

3.4.6 Reconnection
The Parties shall cooperate with each other to restore the Generating Facility, Interconnection Facilities, and the Distribution Provider's Distribution System and/or Transmission System to their normal operating state as soon as reasonably practicable following a temporary disconnection.

Article 4. Cost Responsibility for Interconnection Facilities and Distribution Upgrades

4.1 Interconnection Facilities

4.1.1 The Interconnection Customer shall pay for the cost of the Interconnection Facilities itemized in Attachment 2 of this Agreement. The Distribution Provider shall provide a best estimate cost, including overheads, for the purchase and construction of its Interconnection Facilities and provide a detailed itemization of

such costs. Costs associated with Interconnection Facilities may be shared with other entities that may benefit from such facilities by agreement of the Interconnection Customer, such other entities, and the Distribution Provider.

4.1.2 The Interconnection Customer shall be responsible for its share of all reasonable expenses, including overheads, associated with (1) owning, operating, maintaining, repairing, and replacing its own Interconnection Facilities, and (2) operating, maintaining, repairing, and replacing the Distribution Provider's Interconnection Facilities.

4.2 Distribution Upgrades

The Distribution Provider shall design, procure, construct, install, and own the Distribution Upgrades described in Attachment 6 of this Agreement. If the Distribution Provider and the Interconnection Customer agree, the Interconnection Customer may construct Distribution Upgrades that are located on land owned by the Interconnection Customer. The actual cost of the Distribution Upgrades, including overheads, shall be directly assigned to the Interconnection Customer.

Article 5. Cost Responsibility for Network Upgrades

5.1 Applicability

No portion of this Article 5 shall apply unless the interconnection of the Generating Facility requires Network Upgrades.

5.2 Network Upgrades

The Distribution Provider or the Distribution Owner shall design, procure, construct, install, and own the Network Upgrades described in Attachment 6 of this Agreement. If the Distribution Provider and the Interconnection Customer agree, the Interconnection Customer may construct Network Upgrades that are located on land owned by the Interconnection Customer. Unless the Distribution Provider elects to pay for Network Upgrades, the actual cost of the Network Upgrades, including overheads, shall be borne by the Interconnection Customer unless Section 5.2.1 directs otherwise.

5.2.1 Repayment of Amounts Advanced for Network Upgrades

To the extent that the CAISO Tariff, currently Section 12.3.2 of Appendix Y, provides for cash repayment to interconnection customers for contribution to the cost of Network Upgrades, the Interconnection Customer shall be entitled to a cash repayment, equal to the total amount paid to the Distribution Provider and Affected System operator, if any, for Network Upgrades, including any tax gross-up or other tax-related payments associated with the Network Upgrades, and not otherwise refunded to the Interconnection Customer, to be paid to the Interconnection Customer on a dollar-for-dollar basis for the non-usage sensitive portion of transmission charges, as payments are made under the Distribution Provider's Tariff and Affected System's Tariff for transmission services with

respect to the Generating Facility. Any repayment shall include interest calculated in accordance with the methodology set forth in FERC's regulations at 18 C.F.R. §35.19a(a)(2)(iii) from the date of any payment for Network Upgrades through the date on which the Interconnection Customer receives a repayment of such payment pursuant to this subparagraph. The Interconnection Customer may assign such repayment rights to any person. To the extent that the CAISO Tariff does not provide for cash repayment to interconnection customers for contribution to the cost of Network Upgrades, Interconnection Customer is not entitled to a cash repayment for amounts paid to the Distribution Provider and Affected System operator for Network Upgrades, and no cash repayment shall be made pursuant to this Agreement.

5.2.1.1 If the Interconnection Customer is entitled to a cash repayment pursuant to Article 5.2.1, the Interconnection Customer, the Distribution Provider, and any applicable Affected System operators may adopt any alternative payment schedule that is mutually agreeable so long as the Distribution Provider and said Affected System operators take one of the following actions no later than five years from the Commercial Operation Date: (1) return to the Interconnection Customer any amounts advanced for Network Upgrades not previously repaid, or (2) declare in writing that the Distribution Provider or any applicable Affected System operators will continue to provide payments to the Interconnection Customer on a dollar-for-dollar basis for the non-usage sensitive portion of transmission charges, or develop an alternative schedule that is mutually agreeable and provides for the return of all amounts advanced for Network Upgrades not previously repaid; however, full reimbursement shall not extend beyond twenty (20) years from the commercial operation date.

5.2.1.2 If the Generating Facility fails to achieve commercial operation, but it or another generating facility is later constructed and requires use of the Network Upgrades, the Distribution Provider and Affected System operator shall at that time reimburse the Interconnection Customer for the amounts advanced for the Network Upgrades if the Interconnection Customer is entitled to a cash repayment pursuant to Article 5.2.1. Before any such reimbursement can occur, the Interconnection Customer, or the entity that ultimately constructs the generating facility, if different, is responsible for identifying the entity to which reimbursement must be made.

5.3 [Intentionally Omitted]

5.4 Rights Under Other Agreements

Notwithstanding any other provision of this Agreement, nothing herein shall be construed as relinquishing or foreclosing any rights, including but not limited to firm transmission rights, capacity rights, transmission congestion rights, or transmission credits, that the Interconnection Customer shall be entitled to, now or in the future, under any other agreement or tariff as a result of, or otherwise associated with, the transmission capacity, if any, created by the Network Upgrades, including the right to obtain cash reimbursements or transmission credits for transmission service that is not associated with the Generating Facility.

Article 6. Billing, Payment, Milestones, and Financial Security

6.1 Billing and Payment Procedures and Final Accounting

6.1.1 The Distribution Provider shall bill the Interconnection Customer for the design, engineering, construction, and procurement costs, including any applicable taxes, of Interconnection Facilities and Upgrades contemplated by this Agreement on a monthly basis, or as otherwise agreed by the Parties. The Interconnection Customer shall pay each bill within 30 calendar days of receipt, or as otherwise agreed to by the Parties.

6.1.2 Within three months of completing the construction and installation of the Distribution Provider's Interconnection Facilities and/or Upgrades described in the Attachments to this Agreement, the Distribution Provider shall provide the Interconnection Customer with a final accounting report of any difference between (1) the Interconnection Customer's cost responsibility for the actual cost of such facilities or Upgrades, and (2) the Interconnection Customer's previous aggregate payments to the Distribution Provider for such facilities or Upgrades. If the Interconnection Customer's cost responsibility exceeds its previous aggregate payments, the Distribution Provider shall invoice the Interconnection Customer for the amount due and the Interconnection Customer shall make payment to the Distribution Provider within 30 calendar days. If the Interconnection Customer's previous aggregate payments exceed its cost responsibility under this Agreement, the Distribution Provider shall refund to the Interconnection Customer an amount equal to the difference within 30 calendar days of the final accounting report.

6.2 Milestones

The Parties shall agree on milestones for which each Party is responsible and list them in Attachment 4 of this Agreement. A Party's obligations under this provision may be extended by agreement. If a Party anticipates that it will be unable to meet a milestone for any reason other than a Uncontrollable Force Event, it shall immediately notify the other Party of the reason(s) for not meeting the milestone and (1) propose the earliest reasonable alternate date by which it can attain this and future milestones, and (2) requesting appropriate amendments to Attachment 4. The Party affected by the failure to meet a milestone shall not unreasonably withhold agreement to such an amendment unless it will suffer significant uncompensated economic or operational harm from the delay, (2) attainment of the same milestone has previously been delayed, or (3) it has reason to believe that the delay in meeting the milestone is intentional or unwarranted notwithstanding the circumstances explained by the Party proposing the amendment.

6.3 Financial Security Arrangements

At least 20 Business Days prior to the commencement of the design, procurement, installation, or construction of a discrete portion of the Distribution Provider's

Interconnection Facilities and Upgrades, the Interconnection Customer shall provide the Distribution Provider, at the Interconnection Customer's option, a guarantee, a surety bond, letter of credit or other form of security that is reasonably acceptable to the Distribution Provider and is consistent with the Uniform Commercial Code of the jurisdiction where the Point of Interconnection is located. Such security for payment shall be in an amount sufficient to cover the costs for constructing, designing, procuring, and installing the applicable portion of the Distribution Provider's Interconnection Facilities and Upgrades and shall be reduced on a dollar-for-dollar basis for payments made to the Distribution Provider under this Agreement during its term. In addition:

6.3.1 The guarantee must be made by an entity that meets the creditworthiness requirements of the Distribution Provider, and contain terms and conditions that guarantee payment of any amount that may be due from the Interconnection Customer, up to an agreed-to maximum amount.

6.3.2 The letter of credit or surety bond must be issued by a financial institution or insurer reasonably acceptable to the Distribution Provider and must specify a reasonable expiration date.

Article 7. Assignment, Liability, Indemnity, Uncontrollable Force, Consequential Damages, and Default

7.1 Assignment

This Agreement may be assigned by either Party upon fifteen (15) Business Days prior written notice and opportunity to object by the other Party; provided that:

7.1.1 Either Party may assign this Agreement without the consent of the other Party to any affiliate of the assigning Party with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Agreement, provided that the Interconnection Customer promptly notifies the Distribution Provider of any such assignment;

7.1.2 The Interconnection Customer shall have the right to assign this Agreement, without the consent of the Distribution Provider, for collateral security purposes to aid in providing financing for the Generating Facility, provided that the Interconnection Customer will promptly notify the Distribution Provider of any such assignment.

7.1.3 Any attempted assignment that violates this article is void and ineffective. Assignment shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. An assignee is responsible for meeting the same financial, credit, and insurance obligations as the Interconnection Customer. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.

7.2 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, except as authorized by this Agreement.

7.3 Indemnity

7.3.1 This provision protects each Party from liability incurred to third parties as a result of carrying out the provisions of this Agreement. Liability under this provision is exempt from the general limitations on liability found in article 7.2.

7.3.2 The Parties shall at all times indemnify, defend, and hold the other Party harmless from, any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, arising out of or resulting from the other Party's action or failure to meet its obligations under this Agreement on behalf of the indemnifying Party, except in cases of gross negligence or intentional wrongdoing by the indemnified Party.

7.3.3 If an indemnified person is entitled to indemnification under this article as a result of a claim by a third party, and the indemnifying Party fails, after notice and reasonable opportunity to proceed under this article, to assume the defense of such claim, such indemnified person may at the expense of the indemnifying Party contest, settle or consent to the entry of any judgment with respect to, or pay in full, such claim.

7.3.4 If an indemnifying party is obligated to indemnify and hold any indemnified person harmless under this article, the amount owing to the indemnified person shall be the amount of such indemnified person's actual loss, net of any insurance or other recovery.

7.3.5 Promptly after receipt by an indemnified person of any claim or notice of the commencement of any action or administrative or legal proceeding or investigation as to which the indemnity provided for in this article may apply, the indemnified person shall notify the indemnifying party of such fact. Any failure of or delay in such notification shall not affect a Party's indemnification obligation unless such failure or delay is materially prejudicial to the indemnifying party.

7.4 Consequential Damages

Other than as expressly provided for in this Agreement, neither Party shall be liable under any provision of this Agreement for any losses, damages, costs or expenses for any

special, indirect, incidental, consequential, or punitive damages, including but not limited to loss of profit or revenue, loss of the use of equipment, cost of capital, cost of temporary equipment or services, whether based in whole or in part in contract, in tort, including negligence, strict liability, or any other theory of liability; provided, however, that damages for which a Party may be liable to the other Party under another agreement will not be considered to be special, indirect, incidental, or consequential damages hereunder.

7.5 Uncontrollable Force

7.5.1 As used in this article, an Uncontrollable Force Event shall mean "any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm, flood, earthquake, explosion, breakage or accident to machinery or equipment, any curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond the reasonable control of the Distribution Provider or Interconnection Customer which could not be avoided through the exercise of Good Utility Practice. An Uncontrollable Force Event does not include an act of negligence or intentional wrongdoing by the Party claiming Uncontrollable Force."

7.5.2 If an Uncontrollable Force Event prevents a Party from fulfilling any obligations under this Agreement, the Party affected by the Uncontrollable Force Event (Affected Party) shall promptly notify the other Party, either in writing or via the telephone, of the existence of the Uncontrollable Force Event. The notification must specify in reasonable detail the circumstances of the Uncontrollable Force Event, its expected duration, and the steps that the Affected Party is taking to mitigate the effects of the event on its performance. The Affected Party shall keep the other Party informed on a continuing basis of developments relating to the Uncontrollable Force Event until the event ends. The Affected Party will be entitled to suspend or modify its performance of obligations under this Agreement (other than the obligation to make payments) only to the extent that the effect of the Uncontrollable Force Event cannot be mitigated by the use of Reasonable Efforts. The Affected Party will use Reasonable Efforts to resume its performance as soon as possible.

7.6 Default

7.6.1 No Default shall exist where such failure to discharge an obligation (other than the payment of money) is the result of an Uncontrollable Force Event as defined in this Agreement or the result of an act or omission of the other Party. Upon a Default, the non-defaulting Party shall give written notice of such Default to the defaulting Party. Except as provided in article 7.6.2, the defaulting Party shall have 60 calendar days from receipt of the Default notice within which to cure such Default; provided however, if such Default is not capable of cure within 60 calendar days, the defaulting Party shall commence such cure within 20 calendar days after notice and continuously and diligently complete such cure within six

months from receipt of the Default notice; and, if cured within such time, the Default specified in such notice shall cease to exist.

7.6.2 If a Default is not cured as provided in this article, or if a Default is not capable of being cured within the period provided for herein, the non-defaulting Party shall have the right to terminate this Agreement by written notice at any time until cure occurs, and be relieved of any further obligation hereunder and, whether or not that Party terminates this Agreement, to recover from the defaulting Party all amounts due hereunder, plus all other damages and remedies to which it is entitled at law or in equity. The provisions of this article will survive termination of this Agreement.

Article 8. Insurance

8.1 General Liability and Additional Insurance

The Interconnection Customer shall, at its own expense, maintain in force general liability insurance without any exclusion for liabilities related to the interconnection undertaken pursuant to this Agreement. The amount of such insurance shall be sufficient to insure against all reasonably foreseeable direct liabilities given the size and nature of the generating equipment being interconnected, the interconnection itself, and the characteristics of the system to which the interconnection is made. The Interconnection Customer shall obtain additional insurance only if necessary as a function of owning and operating a generating facility. Such insurance shall be obtained from an insurance provider authorized to do business in California. Certification that such insurance is in effect shall be provided upon request of the Distribution Provider, except that the Interconnection Customer shall show proof of insurance to the Distribution Provider no later than ten (10) Business Days prior to the anticipated Parallel Operation date. An Interconnection Customer of sufficient credit-worthiness may propose to self-insure for such liabilities, and such a proposal shall not be unreasonably rejected.

8.2 Maintenance of Insurance

The Distribution Provider agrees to maintain general liability insurance or self-insurance consistent with the Distribution Provider’s commercial practice. Such insurance or self-insurance shall not exclude coverage for the Distribution Provider's liabilities undertaken pursuant to this Agreement.

8.3 Notification

The Parties further agree to notify each other whenever an accident or incident occurs resulting in any injuries or damages that are included within the scope of coverage of such insurance, whether or not such coverage is sought.

Article 9. Confidentiality

9.1 Definition of Confidential Information

The confidentiality provisions applicable to this Agreement are set forth in Section D.7, Confidentiality of Rule 21 and in the following provisions included in this Article.

9.1.1 Release of Confidential Information

Neither Party shall release or disclose Confidential Information to any other person, employees, consultants, or to parties who may be or considering providing financing to or equity participation with Interconnection Customer, or to potential purchasers or assignees of Interconnection Customer, on a need-to-know basis in connection with these procedures, unless such person has first been advised of the confidentiality provisions of this Article and has agreed to comply with such provisions. Notwithstanding the foregoing, a Party providing Confidential Information to any person shall remain primarily responsible for any release of Confidential Information in contravention of this Article.

9.1.2 Rights

Each Party retains all rights, title, and interest in the Confidential Information that each Party discloses to the other Party. The disclosure by each Party to the other Party of Confidential Information shall not be deemed a waiver by either Party or any other person or entity of the right to protect the Confidential Information from public disclosure.

9.1.3 No Warranties

By providing Confidential Information, neither Party makes any warranties or representations as to its accuracy or completeness. In addition, by supplying Confidential Information, neither Party obligates itself to provide any particular information or Confidential Information to the other Party nor to enter into any further agreements or proceed with any other relationship or joint venture.

9.1.4 Standard of Care

Each Party shall use at least the same standard of care to protect Confidential Information it receives as it uses to protect its own Confidential Information from unauthorized disclosure, publication or dissemination; however, in no case shall a Party use less than reasonable care in protecting Confidential Information. Each Party may use Confidential Information solely to fulfill its obligations to the other Party under this Agreement or its regulatory requirements.

9.1.5 Order of Disclosure

If a court or a Government Authority or entity with the right, power, and apparent authority to do so requests or requires either Party, by subpoena, oral deposition, interrogatories, requests for production of documents, administrative order, or otherwise, to disclose Confidential Information, that Party shall provide the other

Party with prompt notice of such request(s) or requirement(s) so that the other Party may seek an appropriate protective order or waive compliance. Notwithstanding the absence of a protective order or waiver, the Party may disclose such Confidential Information which, in the opinion of its counsel, the Party is legally compelled to disclose. Each Party will use Reasonable Efforts to obtain reliable assurance that confidential treatment will be accorded any Confidential Information so furnished.

9.1.6 Remedies

The Parties agree that monetary damages would be inadequate to compensate a Party for the other Party's Breach of its obligations under this Article. Each Party accordingly agrees that the other Party shall be entitled to equitable relief, by way of injunction or otherwise, if the first Party Breaches or threatens to Breach its obligations under this Article, which equitable relief shall be granted without bond or proof of damages, and the receiving Party shall not plead in defense that there would be an adequate remedy at law. Such remedy shall not be deemed an exclusive remedy for the Breach of this Article, but shall be in addition to all other remedies available at law or in equity. The Parties further acknowledge and agree that the covenants contained herein are necessary for the protection of legitimate business interests and are reasonable in scope. No Party, however, shall be liable for indirect, incidental, or consequential or punitive damages of any nature or kind resulting from or arising in connection with this Article.

Article 10. Disputes

10.1 Dispute Resolution

Any dispute arising between the Parties regarding a Party's performance of its obligations under this Agreement or requirements related to the interconnection of the Generating Facility shall be resolved according to the procedures in Rule 21.

Article 11. Taxes

11.1 Applicable Tax Laws and Regulation

The Parties agree to follow all applicable tax laws and regulations, consistent with CPUC policy and Internal Revenue Service requirements.

11.2 Maintenance of Tax Status

Each Party shall cooperate with the other to maintain the other Party's tax status. Nothing in this Agreement is intended to adversely affect the Distribution Provider's tax exempt status with respect to the issuance of bonds including, but not limited to, local furnishing bonds.

Article 12. Miscellaneous

12.1 Governing Law, Regulatory Authority, and Rules
The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of California (where the Point of Interconnection is located), without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations. Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a Governmental Authority.

12.2 Amendment
The Parties may amend this Agreement by a written instrument duly executed by both Parties.

12.3 No Third-Party Beneficiaries
This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and where permitted, their assigns.

12.4 Waiver

12.4.1 The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.

12.4.2 Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Distribution Provider. Any waiver of this Agreement shall, if requested, be provided in writing.

12.5 Entire Agreement
This Agreement, including all Attachments, and any incorporated tariffs or Rules, constitutes the entire agreement between the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between the Parties with respect to the subject matter of this Agreement. There are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, either Party's compliance with its obligations under this Agreement.

12.6 Multiple Counterparts
This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

12.7 No Partnership

This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

12.8 Severability

If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.

12.9 Security Arrangements

Infrastructure security of electric system equipment and operations and control hardware and software is essential to ensure day-to-day reliability and operational security. All public utilities are expected to meet basic standards for system infrastructure and operational security, including physical, operational, and cyber-security practices.

12.10 Environmental Releases

Each Party shall notify the other Party, first orally and then in writing, of the release of any hazardous substances, any asbestos or lead abatement activities, or any type of remediation activities related to the Generating Facility or the Interconnection Facilities, each of which may reasonably be expected to affect the other Party. The notifying Party shall (1) provide the notice as soon as practicable, provided such Party makes a good faith effort to provide the notice no later than 24 hours after such Party becomes aware of the occurrence, and (2) promptly furnish to the other Party copies of any publicly available reports filed with any governmental authorities addressing such events.

12.11 Subcontractors

Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Party for the performance of such subcontractor.

12.11.1 The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully responsible to the other Party for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event

shall the Distribution Provider be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer under this Agreement. Any applicable obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

12.11.2 The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

12.12 CPUC Modification

Unless otherwise ordered by the CPUC, this Agreement at all times shall be subject to such modifications as the CPUC may direct from time to time in the exercise of its jurisdiction.

12.13 Review of Records and Data

12.13.1 The Distribution Provider shall have the right to review and obtain copies of Interconnection Customer'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 Interconnection Customer's Generating Facility or its interconnection with Distribution Provider's Distribution System.

12.13.2 The Interconnection Customer authorizes the Distribution Provider to release to the California Energy Commission ("CEC"), the CAISO, and/or the CPUC information regarding the Generating Facility, including the Interconnection Customer'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, CAISO's, or CPUC's rules and regulations.

Article 13. Notices

13.1 General

Unless otherwise provided in this Agreement, any written notice, demand, or request required or authorized in connection with this Agreement ("Notice") shall be deemed properly given if delivered in person, delivered by recognized national currier service, or sent by first class mail, postage prepaid, to the person specified below:

If to the Interconnection Customer:

Interconnection Customer: _____

Attention: _____

Address: _____

City: _____ State:_____ Zip:_____

Phone: _____ Fax: _____

If to the Distribution Provider:
Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

13.2 Billing and Payment
Billings and payments shall be sent to the addresses set out below:

Interconnection Customer: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____

Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____

13.3 Alternative Forms of Notice
Any notice or request required or permitted to be given by either Party to the other and not required by this Agreement to be given in writing may be so given by telephone, facsimile or e-mail to the telephone numbers and e-mail addresses set out below:

If to the Interconnection Customer:

Interconnection Customer: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

If to the Distribution Provider:

Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

13.4 Designated Operating Representative
The Parties may also designate operating representatives to conduct the communications which may be necessary or convenient for the administration of this Agreement. This person will also serve as the point of contact with respect to operations and maintenance of the Party's facilities.

Interconnection Customer's Operating Representative:

Interconnection Customer: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

Distribution Provider's Operating Representative:

Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

13.5 Changes to the Notice Information
Either Party may change this information by giving five Business Days written notice prior to the effective date of the change.

Article 14. Signatures

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective duly authorized representatives.

For the Distribution Provider

Name: _____

Title: _____

Date: _____

For the Interconnection Customer

Name: _____

Title: _____

Date: _____

Attachment 1

Glossary of Terms

Affected System - An electric system other than the Distribution Provider's Distribution System that may be affected by the proposed interconnection, including but not limited to the Transmission System.

Applicable Laws and Regulations - All duly promulgated applicable federal, state and local laws, regulations, rules, ordinances, codes, decrees, judgments, directives, or judicial or administrative orders, permits and other duly authorized actions of any Governmental Authority.

Business Day - Monday through Friday, excluding Federal and State Holidays.

Default - The failure of a breaching Party to cure its breach under the Agreement.

Distribution Owner - The entity that owns, leases or otherwise possesses an interest in the portion of the Distribution System at the Point of Interconnection and may be a Party to the Agreement to the extent necessary.

Distribution Provider - The public utility (or its designated agent) that owns, controls, or operates transmission or distribution facilities used for the transmission of electricity and provides distribution service to the Interconnection Customer. The term Distribution Provider should be read to include the Distribution Owner when the Distribution Owner is separate from the Distribution Provider.

Distribution System - Those non-CAISO transmission and distribution facilities, owned, controlled and operated by the Distribution Provider that are used to provide distribution service, which facilities and equipment are used to transmit electricity to ultimate usage points such as homes and industries directly from nearby generators or from interchanges with higher voltage transmission networks which transport bulk power over longer distances. The voltage levels at which Distribution Systems operate differ among areas.

Distribution Upgrades - The additions, modifications, and upgrades to the Distribution Provider's Distribution System at or beyond the Point of Interconnection to facilitate interconnection of the Generating Facility. Distribution Upgrades do not include Interconnection Facilities.

Fast Track Process - The interconnection study process set forth in Section F.2 of Rule 21.

Generating Facility -The Interconnection Customer's device for the production or storage of electricity identified in Attachment 2 of the Agreement, but shall not include the Interconnection Customer's Interconnection Facilities.

Good Utility Practice - Any of the practices, methods and acts engaged in or approved by a significant portion of the electric industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.

Governmental Authority - Any federal, state, local or other governmental regulatory or administrative agency, court, commission, department, board, or other governmental subdivision, legislature, rulemaking board, tribunal, or other governmental authority having jurisdiction over the Parties, their respective facilities, or the respective services they provide, and exercising or entitled to exercise any administrative, executive, police, or taxing authority or power; provided, however, that such term does not include the Interconnection Customer, the Distribution Provider, or any Affiliate thereof.

Interconnection Customer - Any entity, including the Distribution Provider, Distribution Owner or any of the affiliates or subsidiaries of either, that proposes to interconnect its Generating Facility with the Distribution Provider's Distribution System. The definition of "Interconnection Customer" in this Agreement is intended to be identical to and used interchangeably with the definition of "Producer" in Rule 21.

Interconnection Facilities - The Distribution Provider's Interconnection Facilities and the Interconnection Customer's Interconnection Facilities. Collectively, Interconnection Facilities include all facilities and equipment between the Generating Facility and the Point of Interconnection, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Generating Facility to the Distribution Provider's Distribution System. Interconnection Facilities are sole use facilities and shall not include Distribution Upgrades or Network Upgrades.

Interconnection Handbook - A handbook, developed by the Distribution Provider and posted on the Distribution Provider's website or otherwise made available by the Distribution Provider, describing the technical and operational requirements for wholesale generators and loads connected to the Distribution System, as such handbook may be modified or superseded from time to time. In the event of a conflict between the terms of this Agreement and the terms of the Distribution Provider's Interconnection Handbook, the terms in this Agreement shall govern.

Network Upgrades - Additions, modifications, and upgrades to the Distribution Provider's Transmission System required at or beyond the point at which the Distribution System connects to the Distribution Provider's Transmission System to accommodate the interconnection of the Generating Facility to the Distribution Provider's Distribution System. Network Upgrades do not include Distribution Upgrades.

Operating Requirements - Any operating and technical requirements that may be applicable

due to Regional Transmission Organization, the CAISO, balancing authority area, or the Distribution Provider's requirements, including those set forth in the Agreement.

Party or Parties - The Distribution Provider, Distribution Owner, Interconnection Customer, Producer or any combination of the above.

Point of Interconnection - The point where the Interconnection Facilities connect with the Distribution Provider's Distribution System.

Reasonable Efforts - With respect to an action required to be attempted or taken by a Party under the Agreement, efforts that are timely and consistent with Good Utility Practice and are otherwise substantially equivalent to those a Party would use to protect its own interests.

Transmission System - Those facilities owned by the Distribution Provider that have been placed under the CAISO's operational control and are part of the CAISO Grid.

Upgrades - The required additions and modifications to the Distribution Provider's Distribution System and Transmission System at or beyond the Point of Interconnection. Upgrades may be Network Upgrades or Distribution Upgrades. Upgrades do not include Interconnection Facilities.

Attachment 2

Description and Costs of the Generating Facility, Interconnection Facilities, and Metering Equipment

Equipment, including the Generating Facility, Interconnection Facilities, and metering equipment shall be itemized and identified as being owned by the Interconnection Customer, the Distribution Provider, or the Distribution Owner. The Distribution Provider will provide a best estimate itemized cost, including overheads, of its Interconnection Facilities and metering equipment, and a best estimate itemized cost of the annual operation and maintenance expenses associated with its Interconnection Facilities and metering equipment.

Attachment 3

One-line Diagram Depicting the Generating Facility, Interconnection Facilities, Metering Equipment, and Upgrades

Attachment 4

Milestones

In-Service Date: _____

Critical milestones and responsibility as agreed to by the Parties:

	Milestone/Date	Responsible Party
(1)	_____	_____
(2)	_____	_____
(3)	_____	_____
(4)	_____	_____
(5)	_____	_____
(6)	_____	_____
(7)	_____	_____
(8)	_____	_____
(9)	_____	_____
(10)	_____	_____

Agreed to by:

For the Distribution Provider_____ Date_____

For the Distribution Owner (If Applicable) _____ Date_____

For the Interconnection Customer_____ Date_____

Attachment 5

Additional Operating Requirements for the Distribution Provider's Distribution System and Affected Systems Needed to Support the Interconnection Customer's Needs

The Distribution Provider shall also provide requirements that must be met by the Interconnection Customer prior to initiating parallel operation with the Distribution Provider's Distribution System.

Attachment 6

Distribution Provider's Description of its Upgrades and Cost Responsibility

The Distribution Provider shall describe Upgrades and provide an itemized best estimate of the cost, including overheads, of the Upgrades and annual operation and maintenance expenses associated with such Upgrades. The Distribution Provider shall functionalize Upgrade costs and annual expenses as either transmission or distribution related.

RULE 21 EXPORTING GENERATING FACILITY INTERCONNECTION REQUEST

Provide two copies of this completed form pursuant to Section 6 below.

1. The undersigned Applicant submits this request to interconnect its Generating Facility with Distribution Provider's Distribution System pursuant to Rule 21 (check only one):
   - ☐ Detailed Study Process
   - ☐ Fast Track Process

2. This Interconnection Request is for (check only one):
   - ☐ A proposed new Generating Facility.
   - ☐ An increase in the generating capacity or a Material Modification of an existing Generating Facility.

3. Applicant provides the following information:

   a. Address or location, including the county, of the proposed new Generating Facility site (to the extent known) or, in the case of an existing Generating Facility, the name and specific location, including the county, of the existing Generating Facility;

      Project Name:

      Project Location:
      Street Address:
      City, State:
      County:
      Zip Code:
      GPS Coordinates:

   b. Maximum net megawatt electrical output (as defined by section 2.c. of Attachment A to this appendix) of the proposed new Generating Facility or the amount of net megawatt increase in the generating capacity of an existing Generating Facility;

      Maximum net megawatt electrical output (MW): _____ or
      Net Megawatt increase (MW): _____

c. Type of project (i.e., gas turbine, hydro, wind, etc.) and general description of the equipment configuration (if more than one type is chosen, include net MW for each);

___ Cogeneration _____ MW
___ Reciprocating Engine _____ MW
___ Biomass _____ MW
___ Steam Turbine _____ MW
___ Gas Turbine _____ MW
___ Wind _____ MW
___ Hydro _____ MW
___ Inverter Based: (e.g., Photovoltaic, Fuel Cell) _____ MW
If Fuel Cell, please describe primary fuel source:
___ Combined Cycle _____ MW
___ Other (please describe):_____

d. Proposed In-Service Date, and Other Key Dates (Day/Month/Year) (Dates must be sequential)

Proposed In-Service Date: / /
Proposed Trial Operation Date: / /
Proposed Commercial Operation Date: / /
Proposed Term of Service (years): _____

e. Name, address, telephone number, and e-mail address of Applicant's contact person (primary person who will be contacted);

Name:
Title:
Company Name:
Street Address:
City, State:
Zip Code:
Phone Number:
Fax Number:
Email Address:
Interconnection Customer's DUNS Number:

f. Approximate location of the proposed Point of Interconnection (i.e., specify distribution facility interconnection point name, voltage level, and the location of interconnection);

g. Applicant Data (set forth in Attachment A)

The Applicant shall provide to the Distribution Provider the technical data called for in Attachment A. Two (2) copies are required.

4. Applicable Interconnection Request fee or Detailed Study deposit amount as specified in Rule 21 made payable to Southern California Edison Company. Send check to Distribution Provider along with:

    1. A completed Interconnection Request form for processing.
    2. A completed Attachment A (Interconnection Request Generating Facility Data).

5. Attach evidence of Site Exclusivity as specified in Rule 21 Section E.2.d as applicable, and name(s), address(es) and contact information of site owner(s).

6. This Interconnection Request shall be submitted to the representative indicated below:

    Southern California Edison Company
    Director of FERC Policy & Contracts
    P.O. Box 800
    Rosemead, CA 91770

    Overnight address:
    2244 Walnut Grove Avenue,
    Rosemead, CA 91770

7. Representative of Applicant to contact:

    [To be completed by Applicant]
    Name:
    Title:
    Company Name:
    Street Address:
    City, State:
    Zip Code:
    Phone Number:
    Fax Number:
    Email Address:

8. If the Applicant also requests Distribution Service, additional information and an additional deposit is required in accordance with Section 15.2 of the WDAT.

9. Applicant should be aware that if Applicant has not yet received Rule 21 Screen Q results from Distribution Provider by March 15th following submittal of this Interconnection Request, Applicant will need to submit, if Applicant voluntarily chooses to do so, an Interconnection Request under Distribution Provider's FERC Wholesale Distribution

Access Tariff (WDAT) by the close of the CAISO cluster application window, (refer to http://www.caiso.com/docs/2002/06/11/2002061110300427214.html for the exact date), in order to participate in the Transmission Cluster Study for the year. An application under WDAT will not impact the results of this Rule 21 study.

10. This Interconnection Request is submitted by:

Legal name of Applicant: _____

By (signature): _____

Name (type or print): _____

Title: _____

Date: _____

Attachment A to Rule 21 Exporting Generating Facility Interconnection Request

GENERATING FACILITY DATA

Provide two copies of this completed form pursuant to Section 6 of Interconnection Request.

Each Applicant will complete Sections 1 and 2 of this Attachment A.
Each Applicant will complete the applicable data in Sections 3 through 6 of this Attachment A based on the type of generating facility(ies) requesting interconnection. (Section 3 for synchronous generators, Section 4 for induction generators, Section 5 for wind turbine generators, and Section 6 for inverter-based generators).
Each Applicant will complete Sections 7 through 10, as applicable.
At any time, Distribution Provider may require Applicant to provide additional technical data, or additional documentation supporting the technical data provided, as deemed necessary by the Distribution Provider to perform Interconnection Studies, other studies, or evaluations as set forth under Rule 21.

1. Provide two original prints and one reproducible copy (no larger than 36" x 24") of the following:

A. Site drawing to scale, showing generator location and Point of Interconnection with the Distribution Provider's Distribution System.
B. Single-line diagram showing applicable equipment such as generating units, step-up transformers, auxiliary transformers, switches/disconnects of the proposed interconnection, including the required protection devices and circuit breakers. For wind and photovoltaic generator projects, the one line diagram should include the distribution lines connecting the various groups of generating units, the generator capacitor banks, the step up transformers, the distribution lines, and the substation transformers and capacitor banks at the Point of Interconnection with the Distribution Provider's Distribution System. This one-line drawing must be signed and stamped by a licensed Professional Engineer if the Generating Facility is larger than 50 kW.

2. Generating Facility General Information:

A. Total Generating Facility rated output (MW): _____
B. Generating Facility auxiliary Load (MW): _____
C. Project net capacity (MW): _____
D. Standby Load when Generating Facility is off-line (MW): _____
E. Number of Generating Units: _____
(Please repeat the following items for each generator)
F. Individual generator rated output (MW for each unit): _____
G. Type (induction, synchronous, D.C. with inverter): _____
H. Phase (3 phase or single phase): _____

3. Synchronous Generator –Information:

3A Generator Information:
(Please repeat the following for each generator)

A. Manufacturer: _____
B. Year Manufactured:_____
C. Rated Generator speed (rpm):_____
D. Rated MVA: _____
E. Rated Terminal Voltage (kV): _____
F. Rated Generator Power Factor: _____
G. Generator Efficiency at Rated Load (%): _____
H. Moment of Inertia (including prime mover): _____
I. Inertia Time Constant (on machine base) H: _____ sec or MJ/MVA
J. SCR (Short-Circuit Ratio - the ratio of the field current required for rated open-circuit voltage to the field current required for rated short-circuit current): _____
K. Please attach generator reactive capability curves.
L. Rated Hydrogen Cooling Pressure in psig (Steam Units only): _____
M. Please attach a plot of generator terminal voltage versus field current that shows the air gap line, the open-circuit saturation curve, and the saturation curve at full load and rated power factor.

3B Excitation System Information:
(Please repeat the following for each generator)

A. Indicate the Manufacturer _____ and Type _____of excitation system used for the generator. For exciter type, please choose from 1 to 9 below or describe the specific excitation system.
   (1) Rotating DC commutator exciter with continuously acting regulator. The regulator power source is independent of the generator terminal voltage and current.
   (2) Rotating DC commentator exciter with continuously acting regulator. The regulator power source is bus fed from the generator terminal voltage.
   (3) Rotating DC commutator exciter with non-continuously acting regulator (i.e., regulator adjustments are made in discrete increments).
   (4) Rotating AC Alternator Exciter with non-controlled (diode) rectifiers. The regulator power source is independent of the generator terminal voltage and current (not bus-fed).

(5) Rotating AC Alternator Exciter with controlled (thyristor) rectifiers. The regulator power source is fed from the exciter output voltage.
(6) Rotating AC Alternator Exciter with controlled (thyristor) rectifiers.
(7) Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from the generator terminal voltage.
(8) Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from a combination of generator terminal voltage and current (compound-source controlled rectifiers system.
(9) Other (specify): _____

B. Attach a copy of the block diagram of the excitation system from its instruction manual. The diagram should show the input, output, and all feedback loops of the excitation system.
C. Excitation system response ratio (ASA): _____
D. Full load rated exciter output voltage: _____
E. Maximum exciter output voltage (ceiling voltage): _____
F. Other comments regarding the excitation system? _____
_____

3C Power System Stabilizer Information:
(Please repeat the following for each generator.)
A. Manufacturer: _____
B. Is the PSS digital or analog? _____
C. Note the input signal source for the PSS?
_____ Bus frequency _____ Shaft speed _____
Bus Voltage _____ Other (specify source)
D. Please attach a copy of a block diagram of the PSS from the PSS Instruction Manual and the correspondence between dial settings and the time constants or PSS gain.
E. Other comments regarding the PSS?
_____
_____
_____

3D Turbine-Governor Information:
(Please repeat the following for each generator)

Please complete Part A for steam, gas or combined-cycle turbines, Part B for hydro turbines, and Part C for both.

A. Steam, gas or combined-cycle turbines:

(1) List type of unit (Steam, Gas, or Combined-cycle):_____
(2) If steam or combined-cycle, does the turbine system have a reheat process (i.e., both high and low pressure turbines)? _____

(3) If steam with reheat process, or if combined-cycle, indicate in the space provided, the percent of full load power produced by each turbine:

Low pressure turbine or gas turbine:_____%

High pressure turbine or steam turbine:_____%

(4) For combined cycle plants, specify the plant net output capacity (MW) for an outage of the steam turbine or an outage of a single combustion turbine:_____

B. Hydro turbines:

(1) Turbine efficiency at rated load: _____%

(2) Length of penstock: _____ft

(3) Average cross-sectional area of the penstock: _____ft2

(4) Typical maximum head (vertical distance from the bottom of the penstock, at the gate, to the water level): _____ft

(5) Is the water supply run-of-the-river or reservoir: _____

(6) Water flow rate at the typical maximum head: _____ft^3/sec

(7) Average energy rate: _____kW-hrs/acre-ft

(8) Estimated yearly energy production: _____kW-hrs

C. Complete this section for each machine, independent of the turbine type.

(1) Turbine manufacturer: _____

(2) Maximum turbine power output: _____MW

(3) Minimum turbine power output (while on line): _____MW

(4) Governor information:

(a) Droop setting (speed regulation): _____

(b) Is the governor mechanical-hydraulic or electro-hydraulic (Electro-hydraulic governors have an electronic speed sensor and transducer.)? _____

(c) Other comments regarding the turbine governor system?

_____

_____

_____

_____

3E Short Circuit Duty Information:

For each generator, provide the following reactances expressed in p.u. on the generator base:

- Xd – Direct Axis Synchronous Reactance: _____ p.u.
- X'd – Direct Axis Transient Reactance: _____ p.u.
- X"d – Direct Axis Subtransient Reactance: _____ p.u.
- X2 – Negative Sequence Reactance: _____ p.u.
- X0 – Zero Sequence Reactance: _____ p.u.

Generator Grounding (select one for each model):

A. _____ Solidly grounded
B. _____ Grounded through an impedance
(Impedance value in p.u. on generator base. R:_____p.u.
X:_____p.u.)
C. _____ Ungrounded

4. Induction Generator Information:
(Please repeat the following for each generator)

A. Motoring Power (kW): _____
B. I_2^2t or K (Heating Time Constant): _____
C. Rotor Resistance, Rr: _____
D. Stator Resistance, Rs: _____
E. Stator Reactance, Xs: _____
F. Rotor Reactance, Xr: _____
G. Magnetizing Reactance, Xm: _____
H. Short Circuit Reactance, Xd": _____
I. Exciting Current: _____
J. Temperature Rise: _____
K. Frame Size: _____
L. Design Letter: _____
M. Reactive Power Required In Vars (No Load): _____
N. Reactive Power Required In Vars (Full Load): _____
O. Total Rotating Inertia, H: _____ Per Unit on kVA Base

5. Wind Turbine Generator (WTG) Information:

(Proposed projects may include one or more WTG types. Please repeat the following for each type of WTG).

A. WTG Manufacturer and Model: _____
B. Number of WTGs: _____
C. WTG Type (check one):
_____ Type 1 (Squirrel-cage induction generator)
_____ Type 2 (Wound rotor induction machine with variable rotor resistance)
_____ Type 3 (Doubly-fed asynchronous generator)
_____ Type 4 (Full converter interface)
D. Nameplate Rating (each WTG): _____/_____ kW/kVA
E. Rated Terminal Voltage: _____ kV
F. For Type 1 or Type 2 WTGs:
(1) uncompensated power factor at full load: _____

(2) power factor correction capacitors at full load: _____MVAR
(3) number of shunt stages and size: _____
(4) Please attach capability curve describing reactive power or power factor range from no output to full rated output, including the effect of shunt compensation

G. For Type 3 or Type 4 WTGs:
(1) Maximum under-excited power factor at full load: _____
(2) Maximum over-excited power factor at full load: _____
(3) Control mode: _____ (voltage control, fixed power factor)
(4) Please attach capability curve describing reactive power or power factor range from no output to full rated output

H. Short Circuit Characteristics: Applicant to provide technical data related to the short circuit characteristics of proposed WTGs for short circuit duty study modeling purposes. For example, the applicant can provide manufacturer short circuit test data showing faulted condition for three phase and single-line-to-ground fault.

Distribution Provider may require testing verification of voltage and harmonic performance during commissioning test of WTG based generation projects.

6. Inverter Based Generation Systems Information:

(Proposed inverter based generation projects may include one or more types of inverters. Please repeat the following for each type of inverter).

A. Inverter Manufacturer and Model: _____
B. Number of Inverters: _____
C. Nameplate Rating (AC, each inverter): _____/_____ kW
D. Nameplate Voltage Rating (AC): _____ kV
E. Maximum AC line current: _____ Amps
F. Nameplate Power Factor Rating (AC): _____
G. Please attach capability curve describing reactive power or power factor range from no output to full rated output
H. Inverter control mode (e.g. voltage, power factor, reactive power): _____
I. Short Circuit Characteristics: Applicant to provide technical data related to the short circuit characteristics of proposed inverter based generation systems. For example, the applicant can provide a sinusoidal waveform test data showing faulted condition at the AC side of the inverter for a three phase and single-line-to-ground fault.
J. Harmonics Characteristics:
(1) Inverter switching frequency: _____
(2) Harmonic characteristics for each unit up to switching frequency: _____
(3) Harmonic characteristics for aggregate generation facility: _____

K. Inverter disconnection characteristics: Applicant to provide voltage sinusoidal waveform test data which shows the voltage characteristics during disconnection of inverter system from distribution system at 100% and at 50% of rated output.

Distribution Provider may require testing verification of voltage and harmonic performance during commissioning test of the inverter based generation systems.

7. Step-Up Transformer Data:

For each step-up transformer (e.g. main step-up transformers, padmount transformers), fill out the data form provided in Table 1.

8. Line Data:

Upon Distribution Provider request, for transmission lines that are to be planned by the generation developer, please provide the following information:

Nominal Voltage: _____ kV
Line Length (miles): _____
Line termination Points: _____
Conductor Type: _____ Size: _____
If bundled. Number per phase: _____, Bundle spacing: _____in.
Phase Configuration. Vertical: _____, Horizontal: _____
Phase Spacing (ft): A-B: _____, B-C: _____, C-A: _____
Distance of lowest conductor to Ground at full load and 40°C: _____ft
Ground Wire Type: _____ Size: _____ Distance to Ground: _____ft
Attach Tower Configuration Diagram
Summer line ratings in amperes (normal and emergency) _____
Positive Sequence Resistance (R): _____ p.u.** (for entire line length)
Positive Sequence Reactance: (X): _____ p.u.** (for entire line length)
Zero Sequence Resistance (R0): _____ p.u.** (for entire line length)
Zero Sequence Reactance: (X0): _____ p.u.** (for entire line length)
Line Charging (B/2): _____ p.u.**
** On 100-MVA and nominal line voltage (kV) Base

9. Plant-Level Reactive Power Compensation Data:
Provide the following information for plant-level reactive power compensation, if applicable:

A. Number of individual shunt capacitor banks: _____
B. Individual shunt capacitor bank rated voltage (kV): _____
C. Individual shunt capacitor bank size (kVAR at rated voltage): _____
D. Planned dynamic reactive control devices (SVC, STATCOM): _____

E. Control range: _____ kVAR (lead) _____ kVAR (lag)
F. Control mode (e.g. voltage, power factor, reactive power): _____
G. Please provide the overall plant reactive power control strategy

10. Load Flow and Dynamic Models:

Upon Distribution Provider request, the following information will be required. The WECC Data Preparation Manual for Power Flow Base Cases and Dynamic Stability Data has established power flow and dynamic modeling requirements for generation projects in WECC base cases. In general, if the aggregate sum of generation on a bus exceeds 10 MVA, it should not be netted. Furthermore, the total netted generation in an area should not exceed five percent of the area's total generation. Based on current WECC modeling requirements, the following information will be required for all generation projects whose net capacity is greater than 10 MVA. The following information may also be required for generation projects less than 10 MVA on a case-by-case basis, based on the amount of generation in the area of the requested Point of Interconnection.

A. Provide load flow model for the generating plant and its interconnection facilities in GE PSLF *.epc format, including new buses, generators, transformers, interconnection facilities. An equivalent model is required for the plant with generation collector systems. This data should reflect the technical data provided in this Attachment A.

B. For each generator, governor, exciter, power system stabilizer, WTG, or inverter based generator, select the appropriate dynamic models from the General Electric PSLF Program Manual and provide the required input data. Include any user written *.p EPCL files to simulate inverter based plants' dynamic responses (typically needed for inverter based PV/wind plants). Provide a completed *.dyd file that contains the information specified in this section.

The GE PSLF manual is available upon request from GE. There are links within the GE PSLF User's Manual to detailed descriptions of specific models, a definition of each parameter, a list of the output channels, explanatory notes, and a control system block diagram. In addition, GE PSLF modeling information and various modeling guidelines documents have been prepared by the WECC Modeling and Validation Work Group. This information is available on the WECC website (www.wecc.biz).

If you require assistance in developing the models, we suggest you contact General Electric. Accurate models are important to obtain accurate study results. Costs associated with any changes in facility requirements that are due to differences between model data provided by the generation developer and the actual generator test data, may be the responsibility of the generation developer.

TABLE 1

TRANSFORMER DATA
(Provide for each level of transformation)

UNIT_____

NUMBER OF TRANSFORMERS_____ PHASE _____

RATING	H Winding	X Winding	Y Winding
Rated MVA	_____	_____	_____
Connection (Delta, Wye, Gnd.)	_____	_____	_____
Cooling Type (OA,OA/FA, etc) :	_____	_____	_____
Temperature Rise Rating	_____	_____	_____
Rated Voltage	_____	_____	_____
BIL	_____	_____	_____
Available Taps (% of rating)	_____	_____	_____
Load Tap Changer? (Y or N)	_____	_____	_____
Tap Settings	_____	_____	_____
IMPEDANCE	H-X	H-Y	X-Y
Percent	_____	_____	_____
MVA Base	_____	_____	_____
Tested Taps	_____	_____	_____
WINDING RESISTANCE	H	X	Y
Ohms	_____	_____	_____

CURRENT TRANSFORMER RATIOS

H_____ X_____ Y_____ N_____

PERCENT EXCITING CURRENT 100 % Voltage; _____ 110% Voltage_____

Supply copy of nameplate and manufacturer's test report when available.

SDG&E RULE 21 GENERATOR INTERCONNECTIONAGREEMENT FOR EXPORTING GENERATING FACILITIES INTERCONNECTING UNDER THE FAST TRACK PROCESS

TABLE OF CONTENTS

Article 1. Scope and Limitations of Agreement.

1.1 Applicability
1.2 Purpose
1.3 No Agreement to Purchase or Deliver Power
1.4 Limitations
1.5 Responsibilities of the Parties
1.6 Parallel Operation Obligations
1.7 Metering
1.8 Reactive Power
1.9 Capitalized Terms

Article 2. Inspection, Testing, Authorization, and Right of Access

2.1 Equipment Testing and Inspection
2.2 Authorization Required Prior to Parallel Operation.
2.3 Right of Access

Article 3. Effective Date, Term, Termination, and Disconnection

3.1 Effective Date
3.2 Term of Agreement
3.3 Termination
3.4 Temporary Disconnection

Article 4. Cost Responsibility for Interconnection Facilities and Distribution Upgrades

4.1 Interconnection Facilities
4.2 Distribution Upgrades
4.3 Local Furnishing Bonds

Article 5. Cost Responsibility for Network Upgrades

5.1 Applicability
5.2 Network Upgrades
5.3 [Intentionally Omitted]
5.4 Rights Under Other Agreements

Article 6. Billing, Payment, Milestones, and Financial Security

6.1 Billing and Payment Procedures and Final Accounting
6.2 Milestones
6.3 Financial Security Arrangements

Article 7. Assignment, Liability, Indemnity, Uncontrollable Force, Consequential Damages, and Default

7.1 Assignment
7.2 Limitation of Liability

7.3 Indemnity
7.4 Consequential Damages
7.5 Uncontrollable Force.
7.6 Default

Article 8. Insurance

8.1 General Liability and Additional Insurance
8.2 Maintenance of Insurance
8.3 Notification

Article 9. Confidentiality

9.1 Definition of Confidential Information

Article 10. Disputes

10.1 Dispute Resolution

Article 11. Taxes

11.1 Applicable Tax Laws and Regulations
11.2 Maintenance of Tax Status

Article 12. Miscellaneous

12.1 Governing Law, Regulatory Authority, and Rules
12.2 Amendment
12.3 No Third-Party Beneficiaries
12.4 Waiver
12.5 Entire Agreement
12.6 Multiple Counterparts
12.7 No Partnership
12.8 Severability
12.9 Security Arrangements
12.10 Environmental Releases
12.11 Subcontractors
12.12 CPUC Modification

12.13 Review of Records and Data

Article 13. Notices

13.1 General
13.2 Billing and Payment
13.3 Alternative Forms of Notice
13.4 Designated Operating Representative
13.5 Changes to the Notice Information

Article 14. Signatures

Attachment 1 - Glossary of Terms
Attachment 2 - Description and Costs of the Generating Facility, Interconnection Facilities, and

Metering Equipment
Attachment 3 - One-line Diagram Depicting the Generating Facility, Interconnection Facilities, Metering Equipment, and Upgrades
Attachment 4 - Milestones
Attachment 5 - Additional Operating Requirements for the Distribution Provider's Distribution System and Affected Systems Needed to Support the Interconnection Customer's Needs
Attachment 6 - Distribution Provider's Description of its Upgrades and Cost Responsibility

This Interconnection Agreement ("Agreement" or "GIA") is made and entered into this _____ day of _____, 20__, by _____ ("Distribution Provider"), and _____ ("Interconnection Customer") each hereinafter sometimes referred to individually as "Party" or both referred to collectively as the "Parties."

Distribution Provider Information

Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State: _____ Zip: _____
Phone: _____ Fax: _____

Interconnection Customer Information

Interconnection Customer: _____
Attention: _____
Address: _____
City: _____ State: _____ Zip: _____
Phone: _____ Fax: _____

Interconnection Customer Application No: _____

WHEREAS, Interconnection Customer proposes to interconnect to the Distribution System;

WHEREAS, the basis for the Parties entering into this Agreement is that Interconnection Customer is a Qualifying Facility ("QF") and will sell all of its exports to the grid to the Distribution Provider under a power purchase agreement ("PPA") entered into pursuant to the Public Utility Regulatory Policies Act of 1978 ("PURPA"); or

WHEREAS, the basis for the Parties entering into this Agreement is:
_____(Insert Description or N/A)_____

THEREFORE, in consideration of the mutual covenants set forth herein, the Parties agree as follows:

Article 1. Scope and Limitations of Agreement

1.1 Applicability
This Agreement shall be used for an interconnection governed by the Distribution Provider's California Public Utilities Commission-("CPUC") approved Electric Rule 21 ("Rule 21") of a Generating Facility that sells all of its exports to the grid to the Distribution Provider. This Agreement is not applicable to NEM Producers, Non-Export Producers and non-compensated exporting Producers.

1.2 Purpose
This Agreement incorporates in its entirety the Distribution Provider's Rule 21, subject to any modifications the CPUC may direct in the exercise of its jurisdiction. This Agreement governs the terms and conditions under which the Interconnection Customer's Generating Facility will interconnect with, and operate in parallel with, the Distribution Provider's Distribution System. In the event of inconsistency between this Agreement and the terms of Rule 21, the provisions of the latter shall control.

1.3 No Agreement to Purchase or Deliver Power
This Agreement does not constitute an agreement to purchase or deliver the Interconnection Customer's power. The purchase or delivery of power and other services that the Interconnection Customer may require will be covered under separate agreements, if any. The Interconnection Customer will be responsible for separately making all necessary arrangements (including scheduling) for delivery of electricity.

1.4 Limitations
Nothing in this Agreement is intended to affect any other agreement between the Distribution Provider and the Interconnection Customer.

1.5 Responsibilities of the Parties

1.5.1 The Parties shall perform all obligations of this Agreement in accordance with all Applicable Laws and Regulations, Operating Requirements, and Good Utility Practice.

1.5.2 The Interconnection Customer shall construct, interconnect, operate and maintain its Generating Facility and construct, operate, and maintain its Interconnection Facilities in accordance with the applicable manufacturer's recommended maintenance schedule, and in accordance with this Agreement, and with Good Utility Practice.

1.5.3 The Distribution Provider shall construct, operate, and maintain its Distribution System, Transmission System, Interconnection Facilities, Distribution Upgrades and Network Upgrades in accordance with this Agreement, and with Good Utility Practice.

1.5.4 The Interconnection Customer agrees to construct its facilities or systems in

accordance with applicable specifications that meet or exceed those provided by the National Electrical Safety Code, the American National Standards Institute, IEEE, Underwriter's Laboratory, and Operating Requirements in effect at the time of construction and other applicable national and state codes and standards. The Interconnection Customer agrees to design, install, maintain, and operate its Generating Facility so as to reasonably minimize the likelihood of a disturbance adversely affecting or impairing the system or equipment of the Distribution Provider and any Affected Systems. The Interconnection Customer shall comply with the Distribution Provider's Interconnection Handbook. In the event of a conflict between the terms of this GIA and the terms of the Distribution Provider's Interconnection Handbook, the terms in this GIA shall govern.

1.5.5 Each Party shall operate, maintain, repair, and inspect, and shall be fully responsible for the facilities that it now or subsequently may own unless otherwise specified in the Attachments to this Agreement. Each Party shall be responsible for the safe installation, maintenance, repair and condition of their respective lines and appurtenances on their respective sides of the point of change of ownership. The Distribution Provider and the Interconnection Customer, as appropriate, shall provide Interconnection Facilities that adequately protect the Distribution Provider's Transmission System, Distribution System, personnel, and other persons from damage and injury. The allocation of responsibility for the design, installation, operation, maintenance and ownership of Interconnection Facilities shall be delineated in the Attachments to this Agreement.

1.5.6 The Distribution Provider shall coordinate with Affected Systems to support the interconnection.

1.5.7 The Interconnection Customer shall maintain QF status during the term of this Agreement.

1.5.8 The Interconnection Customer shall cooperate with the Local Furnishing Distribution Provider to maintain the Local Furnishing Distribution Provider tax status. Nothing in this Agreement is intended to adversely affect the Local Furnishing Distribution Provider's tax exempt status with respect to the issuance of Local Furnishing Bonds.

1.6 Parallel Operation Obligations

Once the Generating Facility has been authorized to commence parallel operation, the Interconnection Customer shall abide by all rules and procedures pertaining to the parallel operation of the Generating Facility in the applicable balancing authority area, including, but not limited to; 1) the rules and procedures concerning the operation of generation set forth in Rule 21 or by the applicable system operator(s) for the Distribution Provider's Distribution System and; 2) the Operating Requirements set forth in Attachment 5 of this Agreement.

1.7 Metering

The Interconnection Customer shall be responsible for the Distribution Provider's reasonable and necessary cost for the purchase, installation, operation, maintenance, testing, repair, and replacement of metering and data acquisition equipment specified in Attachments 2 and 3 of this Agreement. The Interconnection Customer's metering (and data acquisition, as required) equipment shall conform to applicable industry rules and Operating Requirements. Nothing in this provision replaces or alters the metering requirements in the Interconnection Customer's PPA.

1.8 Reactive Power

1.8.1 The Interconnection Customer shall design its Generating Facility to maintain a composite power delivery at continuous rated power output at the Point of Interconnection and the Generating Facility shall be capable of operating within a power factor range of 0.9 leading to 0.9 lagging, unless the Distribution Provider has established different requirements that apply to all similarly situated generators in the balancing authority area on a comparable basis. 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 Distribution Provider. The Interconnection Customer shall notify Distribution Provider if it is using the Generating Facility for power factor correction. Unless otherwise agreed upon by the Interconnection Customer and Distribution Provider, Generating Facilities shall automatically regulate power factor, not voltage, while operating in parallel with Distribution Provider's Distribution System.

1.9 Capitalized Terms

Capitalized terms used herein shall have the meanings specified in the Glossary of Terms in Attachment 1 or the body of this Agreement.

Article 2. Inspection, Testing, Authorization, and Right of Access

2.1 Equipment Testing and Inspection

2.1.1 Pursuant to Rule 21, the Interconnection Customer shall test and inspect its Generating Facility and Interconnection Facilities prior to interconnection. The Interconnection Customer shall notify the Distribution Provider of such activities no fewer than five Business Days (or as may be agreed to by the Parties) prior to such testing and inspection. Testing and inspection shall occur on a Business Day. The Distribution Provider may, at its own expense, send qualified personnel to the Generating Facility site to inspect the interconnection and observe the testing. The Interconnection Customer shall provide the Distribution Provider a written test report when such testing and inspection is completed.

2.1.2 The Distribution Provider shall provide the Interconnection Customer written acknowledgment that it has received the Interconnection Customer's written test report. Such written acknowledgment shall not be deemed to be or construed as

any representation, assurance, guarantee, or warranty by the Distribution Provider of the safety, durability, suitability, or reliability of the Generating Facility or any associated control, protective, and safety devices owned or controlled by the Interconnection Customer or the quality of power produced by the Generating Facility.

2.2 Authorization Required Prior to Parallel Operation

2.2.1 The Distribution Provider shall use Reasonable Efforts to list applicable parallel operation requirements in Attachment 5 of this Agreement. Additionally, the Distribution Provider shall notify the Interconnection Customer of any changes to these requirements as soon as they are known. The Distribution Provider shall make Reasonable Efforts to cooperate with the Interconnection Customer in meeting requirements necessary for the Interconnection Customer to commence parallel operations by the in-service date.

2.2.2 The Interconnection Customer shall not operate its Generating Facility in parallel with the Distribution Provider's Distribution System without prior written authorization of the Distribution Provider. The Distribution Provider will provide such authorization once the Distribution Provider receives notification that the Interconnection Customer has complied with all applicable parallel operation requirements. Such authorization shall not be unreasonably withheld, conditioned, or delayed.

2.3 Right of Access

2.3.1 Upon reasonable notice, the Distribution Provider may send a qualified person to the premises of the Interconnection Customer at or immediately before the time the Generating Facility first operates in parallel to inspect the interconnection, and observe the commissioning of the Generating Facility (including any required testing), startup, and operation for a period of up to three (3) Business Days after initial start-up of the unit. In addition, the Interconnection Customer shall notify the Distribution Provider at least five (5) Business Days prior to conducting any on-site verification testing of the Generating Facility.

2.3.2 Following the initial inspection process described above, at reasonable hours, and upon reasonable notice, or at any time without notice in the event of an emergency or hazardous condition, the Distribution Provider shall have access to the Interconnection Customer's premises for any reasonable purpose in connection with the performance of the obligations imposed on it by this Agreement or if necessary to meet its legal obligation to provide service to its customers.

2.3.3 Costs associated with this Article are subject to the relevant provisions of Rule 21.

Article 3. Effective Date, Term, Termination, and Disconnection

3.1 Effective Date
This Agreement shall become effective upon execution by the Parties.

3.2 Term of Agreement
This Agreement shall become effective on the Effective Date and shall remain in effect for a period of _____years from the Effective Date or such other longer period as the Parties may agree and shall be automatically renewed for each successive one-year period thereafter, unless terminated earlier in accordance with article 3.3 of this Agreement.

3.3 Termination
No termination shall become effective until the Parties have complied with all Applicable Laws and Regulations applicable to such termination.

3.3.1 The Interconnection Customer may terminate this Agreement at any time by giving the Distribution Provider twenty (20) Business Days written notice.

3.3.2 Either Party may terminate this Agreement after Default pursuant to article 7.6.

3.3.3 In addition, if the basis for Rule 21 applicability for this interconnection is based on the Interconnection Customer maintaining QF status and selling all its exports to the grid to Distribution Provider under a PURPA PPA, then this provision applies and Distribution Provider may terminate this Agreement if Interconnection Customer fails to maintain its QF status for the term of this Agreement or upon termination of Interconnection Customer's PURPA PPA.

3.3.3.1 If Section 3.3.3 applies, Interconnection Customer is responsible for maintaining QF status and must notify Distribution Provider sixty (60) Calendar Days in advance of Interconnection Customer failing to maintain its QF status, selling to a third-party, or termination of its PURPA PPA. If Interconnection Customer fails to provide such notice, it is wholly responsible for any penalties incurred from any Governmental Authority or the California Independent System Operator Corporation ("CAISO"), including penalties and charges incurred by the Distribution Provider, as a result of this failure to notify the Distribution Provider.

3.3.3.2 If Interconnection Customer is no longer eligible for a Rule 21 interconnection then Distribution Provider may terminate this Agreement.

3.3.4 Upon termination of this Agreement, the Generating Facility will be disconnected from the Distribution Provider's Distribution System. All costs required to effectuate such disconnection shall be borne by the terminating Party, unless such termination resulted from the non-terminating Party's Default of this GIA or such non-terminating Party otherwise is responsible for these costs under this GIA.

3.3.5 The termination of this Agreement shall not relieve either Party of its liabilities and obligations, owed or continuing at the time of the termination.

3.3.6 This provisions of this article shall survive termination or expiration of this Agreement.

3.3.7 If the Generating Facility no longer falls within the scope and description provided in Section 1.1 of this Agreement, this Agreement is terminated.

3.4 Temporary Disconnection

Temporary disconnection shall continue only for so long as reasonably necessary under Good Utility Practice.

3.4.1 Emergency Conditions -- "Emergency Condition" shall mean a condition or situation: (1) that in the judgment of the Party making the claim is imminently likely to endanger life or property; or (2) that, in the case of the Distribution Provider, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to the Distribution System, the Distribution Provider's Interconnection Facilities or any Affected Systems(s); or (3) that, in the case of the Interconnection Customer, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to, the Generating Facility or the Interconnection Customer's Interconnection Facilities. Under Emergency Conditions, the Distribution Provider may immediately suspend interconnection service and temporarily disconnect the Generating Facility. The Distribution Provider shall notify the Interconnection Customer promptly when it becomes aware of an Emergency Condition that may reasonably be expected to affect the Interconnection Customer's operation of the Generating Facility. The Interconnection Customer shall notify the Distribution Provider promptly when it becomes aware of an Emergency Condition that may reasonably be expected to affect the Distribution Provider's Distribution System or any Affected Systems. To the extent information is known, the notification shall describe the Emergency Condition, the extent of the damage or deficiency, the expected effect on the operation of both Parties' facilities and operations, its anticipated duration, and the necessary corrective action.

3.4.2 Routine Maintenance, Construction, and Repair

The Distribution Provider may interrupt interconnection service or curtail the output of the Generating Facility and temporarily disconnect the Generating Facility from the Distribution Provider's Distribution System when necessary for routine maintenance, construction, and repairs on the Distribution Provider's Distribution System and/or Transmission System. The Distribution Provider shall provide the Interconnection Customer with five Business Days notice prior to such interruption. The Distribution Provider shall use Reasonable Efforts to coordinate such reduction or temporary disconnection with the Interconnection Customer.

3.4.3 Forced Outages
During any forced outage, the Distribution Provider may suspend interconnection service to effect immediate repairs on the Distribution Provider's Distribution System and/or Transmission System. The Distribution Provider shall use Reasonable Efforts to provide the Interconnection Customer with prior notice. If prior notice is not given, the Distribution Provider shall, upon request, provide the Interconnection Customer written documentation after the fact explaining the circumstances of the disconnection.

3.4.4 Adverse Operating Effects
The Distribution Provider shall notify the Interconnection Customer as soon as practicable if, based on Good Utility Practice, operation of the Generating Facility may cause disruption or deterioration of service to other customers served from the same electric system, or if operating the Generating Facility could cause damage to the Distribution Provider's Distribution System or Affected Systems. Supporting documentation used to reach the decision to disconnect shall be provided to the Interconnection Customer upon request. If, after notice, the Interconnection Customer fails to remedy the adverse operating effect within a reasonable time, the Distribution Provider may disconnect the Generating Facility. The Distribution Provider shall provide the Interconnection Customer with five Business Day notice of such disconnection, unless the provisions of article 3.4.1 apply.

3.4.5 Modification of the Generating Facility
The Interconnection Customer must receive written authorization from the Distribution Provider before making any change to the Generating Facility that may have a material impact on the safety or reliability of the Distribution System and/or the Transmission System. Such authorization shall not be unreasonably withheld. Modifications shall be done in accordance with Good Utility Practice. If the Interconnection Customer makes such modification without the Distribution Provider's prior written authorization, the latter shall have the right to temporarily disconnect the Generating Facility.

3.4.6 Reconnection
The Parties shall cooperate with each other to restore the Generating Facility, Interconnection Facilities, and the Distribution Provider's Distribution System and/or Transmission System to their normal operating state as soon as reasonably practicable following a temporary disconnection.

Article 4. Cost Responsibility for Interconnection Facilities and Distribution Upgrades

4.1 Interconnection Facilities

4.1.1 The Interconnection Customer shall pay for the cost of the Interconnection Facilities itemized in Attachment 2 of this Agreement. The Distribution Provider

shall provide a best estimate cost, including overheads, for the purchase and construction of its Interconnection Facilities and provide a detailed itemization of such costs. Costs associated with Interconnection Facilities may be shared with other entities that may benefit from such facilities by agreement of the Interconnection Customer, such other entities, and the Distribution Provider.

4.1.2 The Interconnection Customer shall be responsible for its share of all reasonable expenses, including overheads, associated with (1) owning, operating, maintaining, repairing, and replacing its own Interconnection Facilities, and (2) operating, maintaining, repairing, and replacing the Distribution Provider's Interconnection Facilities.

4.2 Distribution Upgrades
The Distribution Provider shall design, procure, construct, install, and own the Distribution Upgrades described in Attachment 6 of this Agreement. If the Distribution Provider and the Interconnection Customer agree, the Interconnection Customer may construct Distribution Upgrades that are located on land owned by the Interconnection Customer. The actual cost of the Distribution Upgrades, including overheads, shall be directly assigned to the Interconnection Customer.

4.3 If a proposed Interconnection of a Generating Facility would impair the tax-exempt status of interest on the Local Furnishing Bonds or the deductibility of interest expense on the Local Furnishing Bonds to the Local Furnishing Distribution Provider under the Internal Revenue Code, Treasury Regulations and/or applicable IRS rulings, the Interconnection Customer will be required to pay the costs properly attributable to the proposed Interconnection of such Generating Facility.

Article 5. Cost Responsibility for Network Upgrades

5.1 Applicability
No portion of this Article 5 shall apply unless the interconnection of the Generating Facility requires Network Upgrades.

5.2 Network Upgrades
The Distribution Provider or the Distribution Owner shall design, procure, construct, install, and own the Network Upgrades described in Attachment 6 of this Agreement. If the Distribution Provider and the Interconnection Customer agree, the Interconnection Customer may construct Network Upgrades that are located on land owned by the Interconnection Customer. Unless the Distribution Provider elects to pay for Network Upgrades, the actual cost of the Network Upgrades, including overheads, shall be borne by the Interconnection Customer unless Section 5.2.1 directs otherwise.

5.2.1 Repayment of Amounts Advanced for Network Upgrades
To the extent that the CAISO Tariff, currently Section 12.3.2 of Appendix Y, provides for cash repayment to interconnection customers for contribution to the cost of Network Upgrades, the Interconnection Customer shall be entitled to a

cash repayment, equal to the total amount paid to the Distribution Provider and Affected System operator, if any, for Network Upgrades, including any tax gross-up or other tax-related payments associated with the Network Upgrades, and not otherwise refunded to the Interconnection Customer, to be paid to the Interconnection Customer on a dollar-for-dollar basis for the non-usage sensitive portion of transmission charges, as payments are made under the Distribution Provider's Tariff and Affected System's Tariff for transmission services with respect to the Generating Facility. Any repayment shall include interest calculated in accordance with the methodology set forth in FERC's regulations at 18 C.F.R. §35.19a(a)(2)(iii) from the date of any payment for Network Upgrades through the date on which the Interconnection Customer receives a repayment of such payment pursuant to this subparagraph. The Interconnection Customer may assign such repayment rights to any person. To the extent that the CAISO Tariff does not provide for cash repayment to interconnection customers for contribution to the cost of Network Upgrades, Interconnection Customer is not entitled to a cash repayment for amounts paid to the Distribution Provider and Affected System operator for Network Upgrades, and no cash repayment shall be made pursuant to this Agreement.

5.2.1.1 If the Interconnection Customer is entitled to a cash repayment pursuant to Article 5.2.1, the Interconnection Customer, the Distribution Provider, and any applicable Affected System operators may adopt any alternative payment schedule that is mutually agreeable so long as the Distribution Provider and said Affected System operators take one of the following actions no later than five years from the Commercial Operation Date: (1) return to the Interconnection Customer any amounts advanced for Network Upgrades not previously repaid, or (2) declare in writing that the Distribution Provider or any applicable Affected System operators will continue to provide payments to the Interconnection Customer on a dollar-for-dollar basis for the non-usage sensitive portion of transmission charges, or develop an alternative schedule that is mutually agreeable and provides for the return of all amounts advanced for Network Upgrades not previously repaid; however, full reimbursement shall not extend beyond twenty (20) years from the commercial operation date.

5.2.1.2 If the Generating Facility fails to achieve commercial operation, but it or another generating facility is later constructed and requires use of the Network Upgrades, the Distribution Provider and Affected System operator shall at that time reimburse the Interconnection Customer for the amounts advanced for the Network Upgrades if the Interconnection Customer is entitled to a cash repayment pursuant to Article 5.2.1. Before any such reimbursement can occur, the Interconnection Customer, or the entity that ultimately constructs the generating facility, if different, is responsible for identifying the entity to which reimbursement must be made.

5.3 [Intentionally Omitted]

5.4 Rights Under Other Agreements

Notwithstanding any other provision of this Agreement, nothing herein shall be construed as relinquishing or foreclosing any rights, including but not limited to firm transmission rights, capacity rights, transmission congestion rights, or transmission credits, that the Interconnection Customer shall be entitled to, now or in the future, under any other agreement or tariff as a result of, or otherwise associated with, the transmission capacity, if any, created by the Network Upgrades, including the right to obtain cash reimbursements or transmission credits for transmission service that is not associated with the Generating Facility.

Article 6. Billing, Payment, Milestones, and Financial Security

6.1 Billing and Payment Procedures and Final Accounting

6.1.1 The Distribution Provider shall bill the Interconnection Customer for the design, engineering, construction, and procurement costs, including any applicable taxes, of Interconnection Facilities and Upgrades contemplated by this Agreement on a monthly basis, or as otherwise agreed by the Parties. The Interconnection Customer shall pay each bill within 30 calendar days of receipt, or as otherwise agreed to by the Parties.

6.1.2 Within three months of completing the construction and installation of the Distribution Provider's Interconnection Facilities and/or Upgrades described in the Attachments to this Agreement, the Distribution Provider shall provide the Interconnection Customer with a final accounting report of any difference between (1) the Interconnection Customer's cost responsibility for the actual cost of such facilities or Upgrades, and (2) the Interconnection Customer's previous aggregate payments to the Distribution Provider for such facilities or Upgrades. If the Interconnection Customer's cost responsibility exceeds its previous aggregate payments, the Distribution Provider shall invoice the Interconnection Customer for the amount due and the Interconnection Customer shall make payment to the Distribution Provider within 30 calendar days. If the Interconnection Customer's previous aggregate payments exceed its cost responsibility under this Agreement, the Distribution Provider shall refund to the Interconnection Customer an amount equal to the difference within 30 calendar days of the final accounting report.

6.2 Milestones

The Parties shall agree on milestones for which each Party is responsible and list them in Attachment 4 of this Agreement. A Party's obligations under this provision may be extended by agreement. If a Party anticipates that it will be unable to meet a milestone for any reason other than a Uncontrollable Force Event, it shall immediately notify the other Party of the reason(s) for not meeting the milestone and (1) propose the earliest reasonable alternate date by which it can attain this and future milestones, and (2) requesting appropriate amendments to Attachment 4. The Party affected by the failure to

meet a milestone shall not unreasonably withhold agreement to such an amendment unless it will suffer significant uncompensated economic or operational harm from the delay, (2) attainment of the same milestone has previously been delayed, or (3) it has reason to believe that the delay in meeting the milestone is intentional or unwarranted notwithstanding the circumstances explained by the Party proposing the amendment.

6.3 Financial Security Arrangements

At least 20 Business Days prior to the commencement of the design, procurement, installation, or construction of a discrete portion of the Distribution Provider's Interconnection Facilities and Upgrades, the Interconnection Customer shall provide the Distribution Provider, at the Interconnection Customer's option, a guarantee, a surety bond, letter of credit or other form of security that is reasonably acceptable to the Distribution Provider and is consistent with the Uniform Commercial Code of the jurisdiction where the Point of Interconnection is located. Such security for payment shall be in an amount sufficient to cover the costs for constructing, designing, procuring, and installing the applicable portion of the Distribution Provider's Interconnection Facilities and Upgrades and shall be reduced on a dollar-for-dollar basis for payments made to the Distribution Provider under this Agreement during its term. In addition:

6.3.1 The guarantee must be made by an entity that meets the creditworthiness requirements of the Distribution Provider, and contain terms and conditions that guarantee payment of any amount that may be due from the Interconnection Customer, up to an agreed-to maximum amount.

6.3.2 The letter of credit or surety bond must be issued by a financial institution or insurer reasonably acceptable to the Distribution Provider and must specify a reasonable expiration date.

Article 7. Assignment, Liability, Indemnity, Uncontrollable Force, Consequential Damages, and Default

7.1 Assignment

This Agreement may be assigned by either Party upon fifteen (15) Business Days prior written notice and opportunity to object by the other Party; provided that:

7.1.1 Either Party may assign this Agreement without the consent of the other Party to any affiliate of the assigning Party with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Agreement, provided that the Interconnection Customer promptly notifies the Distribution Provider of any such assignment;

7.1.2 The Interconnection Customer shall have the right to assign this Agreement, without the consent of the Distribution Provider, for collateral security purposes to aid in providing financing for the Generating Facility, provided that the Interconnection Customer will promptly notify the Distribution Provider of any such assignment.

7.1.3 Any attempted assignment that violates this article is void and ineffective. Assignment shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. An assignee is responsible for meeting the same financial, credit, and insurance obligations as the Interconnection Customer. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.

7.2 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, except as authorized by this Agreement.

7.3 Indemnity

7.3.1 This provision protects each Party from liability incurred to third parties as a result of carrying out the provisions of this Agreement. Liability under this provision is exempt from the general limitations on liability found in article 7.2.

7.3.2 The Parties shall at all times indemnify, defend, and hold the other Party harmless from, any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, arising out of or resulting from the other Party's action or failure to meet its obligations under this Agreement on behalf of the indemnifying Party, except in cases of gross negligence or intentional wrongdoing by the indemnified Party.

7.3.3 If an indemnified person is entitled to indemnification under this article as a result of a claim by a third party, and the indemnifying Party fails, after notice and reasonable opportunity to proceed under this article, to assume the defense of such claim, such indemnified person may at the expense of the indemnifying Party contest, settle or consent to the entry of any judgment with respect to, or pay in full, such claim.

7.3.4 If an indemnifying party is obligated to indemnify and hold any indemnified person harmless under this article, the amount owing to the indemnified person shall be the amount of such indemnified person's actual loss, net of any insurance or other recovery.

7.3.5 Promptly after receipt by an indemnified person of any claim or notice of the commencement of any action or administrative or legal proceeding or investigation as to which the indemnity provided for in this article may apply, the

indemnified person shall notify the indemnifying party of such fact. Any failure of or delay in such notification shall not affect a Party's indemnification obligation unless such failure or delay is materially prejudicial to the indemnifying party.

7.4 Consequential Damages

Other than as expressly provided for in this Agreement, neither Party shall be liable under any provision of this Agreement for any losses, damages, costs or expenses for any special, indirect, incidental, consequential, or punitive damages, including but not limited to loss of profit or revenue, loss of the use of equipment, cost of capital, cost of temporary equipment or services, whether based in whole or in part in contract, in tort, including negligence, strict liability, or any other theory of liability; provided, however, that damages for which a Party may be liable to the other Party under another agreement will not be considered to be special, indirect, incidental, or consequential damages hereunder.

7.5 Uncontrollable Force

7.5.1 As used in this article, an Uncontrollable Force Event shall mean "any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm, flood, earthquake, explosion, breakage or accident to machinery or equipment, any curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond the reasonable control of the Distribution Provider or Interconnection Customer which could not be avoided through the exercise of Good Utility Practice. An Uncontrollable Force Event does not include an act of negligence or intentional wrongdoing by the Party claiming Uncontrollable Force."

7.5.2 If an Uncontrollable Force Event prevents a Party from fulfilling any obligations under this Agreement, the Party affected by the Uncontrollable Force Event (Affected Party) shall promptly notify the other Party, either in writing or via the telephone, of the existence of the Uncontrollable Force Event. The notification must specify in reasonable detail the circumstances of the Uncontrollable Force Event, its expected duration, and the steps that the Affected Party is taking to mitigate the effects of the event on its performance. The Affected Party shall keep the other Party informed on a continuing basis of developments relating to the Uncontrollable Force Event until the event ends. The Affected Party will be entitled to suspend or modify its performance of obligations under this Agreement (other than the obligation to make payments) only to the extent that the effect of the Uncontrollable Force Event cannot be mitigated by the use of Reasonable Efforts. The Affected Party will use Reasonable Efforts to resume its performance as soon as possible.

7.6 Default

7.6.1 No Default shall exist where such failure to discharge an obligation (other than

the payment of money) is the result of an Uncontrollable Force Event as defined in this Agreement or the result of an act or omission of the other Party. Upon a Default, the non-defaulting Party shall give written notice of such Default to the defaulting Party. Except as provided in article 7.6.2, the defaulting Party shall have 60 calendar days from receipt of the Default notice within which to cure such Default; provided however, if such Default is not capable of cure within 60 calendar days, the defaulting Party shall commence such cure within 20 calendar days after notice and continuously and diligently complete such cure within six months from receipt of the Default notice; and, if cured within such time, the Default specified in such notice shall cease to exist.

7.6.2 If a Default is not cured as provided in this article, or if a Default is not capable of being cured within the period provided for herein, the non-defaulting Party shall have the right to terminate this Agreement by written notice at any time until cure occurs, and be relieved of any further obligation hereunder and, whether or not that Party terminates this Agreement, to recover from the defaulting Party all amounts due hereunder, plus all other damages and remedies to which it is entitled at law or in equity. The provisions of this article will survive termination of this Agreement.

Article 8. Insurance

8.1 General Liability and Additional Insurance

The Interconnection Customer shall, at its own expense, maintain in force general liability insurance without any exclusion for liabilities related to the interconnection undertaken pursuant to this Agreement. The amount of such insurance shall be sufficient to insure against all reasonably foreseeable direct liabilities given the size and nature of the generating equipment being interconnected, the interconnection itself, and the characteristics of the system to which the interconnection is made. The Interconnection Customer shall obtain additional insurance only if necessary as a function of owning and operating a generating facility. Such insurance shall be obtained from an insurance provider authorized to do business in California. Certification that such insurance is in effect shall be provided upon request of the Distribution Provider, except that the Interconnection Customer shall show proof of insurance to the Distribution Provider no later than ten (10) Business Days prior to the anticipated Parallel Operation date. An Interconnection Customer of sufficient credit-worthiness may propose to self-insure for such liabilities, and such a proposal shall not be unreasonably rejected.

8.2 Maintenance of Insurance

The Distribution Provider agrees to maintain general liability insurance or self-insurance consistent with the Distribution Provider’s commercial practice. Such insurance or self-insurance shall not exclude coverage for the Distribution Provider's liabilities undertaken pursuant to this Agreement.

8.3 Notification

The Parties further agree to notify each other whenever an accident or incident occurs

resulting in any injuries or damages that are included within the scope of coverage of such insurance, whether or not such coverage is sought.

Article 9. Confidentiality

9.1 Definition of Confidential Information

The confidentiality provisions applicable to this Agreement are set forth in Section D.7, Confidentiality of Rule 21 and in the following provisions included in this Article.

9.1.1 Release of Confidential Information

Neither Party shall release or disclose Confidential Information to any other person, employees, consultants, or to parties who may be or considering providing financing to or equity participation with Interconnection Customer, or to potential purchasers or assignees of Interconnection Customer, on a need-to-know basis in connection with these procedures, unless such person has first been advised of the confidentiality provisions of this Article and has agreed to comply with such provisions. Notwithstanding the foregoing, a Party providing Confidential Information to any person shall remain primarily responsible for any release of Confidential Information in contravention of this Article.

9.1.2 Rights

Each Party retains all rights, title, and interest in the Confidential Information that each Party discloses to the other Party. The disclosure by each Party to the other Party of Confidential Information shall not be deemed a waiver by either Party or any other person or entity of the right to protect the Confidential Information from public disclosure.

9.1.3 No Warranties

By providing Confidential Information, neither Party makes any warranties or representations as to its accuracy or completeness. In addition, by supplying Confidential Information, neither Party obligates itself to provide any particular information or Confidential Information to the other Party nor to enter into any further agreements or proceed with any other relationship or joint venture.

9.1.4 Standard of Care

Each Party shall use at least the same standard of care to protect Confidential Information it receives as it uses to protect its own Confidential Information from unauthorized disclosure, publication or dissemination; however, in no case shall a Party use less than reasonable care in protecting Confidential Information. Each Party may use Confidential Information solely to fulfill its obligations to the other Party under this Agreement or its regulatory requirements.

9.1.5 Order of Disclosure

If a court or a Government Authority or entity with the right, power, and apparent authority to do so requests or requires either Party, by subpoena, oral deposition, interrogatories, requests for production of documents, administrative order, or otherwise, to disclose Confidential Information, that Party shall provide the other Party with prompt notice of such request(s) or requirement(s) so that the other Party may seek an appropriate protective order or waive compliance. Notwithstanding the absence of a protective order or waiver, the Party may disclose such Confidential Information which, in the opinion of its counsel, the Party is legally compelled to disclose. Each Party will use Reasonable Efforts to obtain reliable assurance that confidential treatment will be accorded any Confidential Information so furnished.

9.1.6 Remedies

The Parties agree that monetary damages would be inadequate to compensate a Party for the other Party's Breach of its obligations under this Article. Each Party accordingly agrees that the other Party shall be entitled to equitable relief, by way of injunction or otherwise, if the first Party Breaches or threatens to Breach its obligations under this Article, which equitable relief shall be granted without bond or proof of damages, and the receiving Party shall not plead in defense that there would be an adequate remedy at law. Such remedy shall not be deemed an exclusive remedy for the Breach of this Article, but shall be in addition to all other remedies available at law or in equity. The Parties further acknowledge and agree that the covenants contained herein are necessary for the protection of legitimate business interests and are reasonable in scope. No Party, however, shall be liable for indirect, incidental, or consequential or punitive damages of any nature or kind resulting from or arising in connection with this Article.

Article 10. Disputes

10.1 Dispute Resolution

Any dispute arising between the Parties regarding a Party's performance of its obligations under this Agreement or requirements related to the interconnection of the Generating Facility shall be resolved according to the procedures in Rule 21..

Article 11. Taxes

11.1 Applicable Tax Laws and Regulation

The Parties agree to follow all applicable tax laws and regulations, consistent with CPUC policy and Internal Revenue Service requirements.

11.2 Amendment

Each Party shall cooperate with the other to maintain the other Party's tax status. Nothing in this Agreement is intended to adversely affect the Distribution Provider's tax exempt

status with respect to the issuance of bonds including, but not limited to, local furnishing bonds.

Article 12. Miscellaneous

12.1 Governing Law, Regulatory Authority, and Rules
The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of California (where the Point of Interconnection is located), without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations. Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a Governmental Authority.

12.2 Amendment
The Parties may amend this Agreement by a written instrument duly executed by both Parties.

12.3 No Third-Party Beneficiaries
This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and where permitted, their assigns.

12.4 Waiver

12.4.1 The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.

12.4.2 Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Distribution Provider. Any waiver of this Agreement shall, if requested, be provided in writing.

12.5 Entire Agreement
This Agreement, including all Attachments, and any incorporated tariffs or Rules, constitutes the entire agreement between the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between the Parties with respect to the subject matter of this Agreement. There are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, either Party's compliance with its obligations under this Agreement.

12.6 Multiple Counterparts
This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

12.7 No Partnership
This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

12.8 Severability
If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.

12.9 Security Arrangements
Infrastructure security of electric system equipment and operations and control hardware and software is essential to ensure day-to-day reliability and operational security. All public utilities are expected to meet basic standards for system infrastructure and operational security, including physical, operational, and cyber-security practices.

12.10 Environmental Releases
Each Party shall notify the other Party, first orally and then in writing, of the release of any hazardous substances, any asbestos or lead abatement activities, or any type of remediation activities related to the Generating Facility or the Interconnection Facilities, each of which may reasonably be expected to affect the other Party. The notifying Party shall (1) provide the notice as soon as practicable, provided such Party makes a good faith effort to provide the notice no later than 24 hours after such Party becomes aware of the occurrence, and (2) promptly furnish to the other Party copies of any publicly available reports filed with any governmental authorities addressing such events.

12.11 Subcontractors
Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Party for the performance of such subcontractor.

12.11.1 The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully

responsible to the other Party for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event shall the Distribution Provider be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer under this Agreement. Any applicable obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

12.11.2 The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

12.12 CPUC Modification

Unless otherwise ordered by the CPUC, this Agreement at all times shall be subject to such modifications as the CPUC may direct from time to time in the exercise of its jurisdiction.

12.13 Review of Records and Data

12.13.1 The Distribution Provider shall have the right to review and obtain copies of Interconnection Customer'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 Interconnection Customer's Generating Facility or its interconnection with Distribution Provider's Distribution System.

12.13.2 The Interconnection Customer authorizes the Distribution Provider to release to the California Energy Commission ("CEC"), the CAISO, and/or the CPUC information regarding the Generating Facility, including the Interconnection Customer'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, CAISO's, or CPUC's rules and regulations.

Article 13. Notices

13.1 General

Unless otherwise provided in this Agreement, any written notice, demand, or request required or authorized in connection with this Agreement ("Notice") shall be deemed properly given if delivered in person, delivered by recognized national currier service, or sent by first class mail, postage prepaid, to the person specified below:

If to the Interconnection Customer:

Interconnection Customer: _____

Attention: _____

Address: _____

City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

If to the Distribution Provider:
Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

13.2 Billing and Payment
Billings and payments shall be sent to the addresses set out below:

Interconnection Customer: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____

Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____

13.3 Alternative Forms of Notice
Any notice or request required or permitted to be given by either Party to the other and not required by this Agreement to be given in writing may be so given by telephone, facsimile or e-mail to the telephone numbers and e-mail addresses set out below:

If to the Interconnection Customer:

Interconnection Customer: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

If to the Distribution Provider:

Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

13.4 Designated Operating Representative
The Parties may also designate operating representatives to conduct the communications

which may be necessary or convenient for the administration of this Agreement. This person will also serve as the point of contact with respect to operations and maintenance of the Party's facilities.

Interconnection Customer's Operating Representative:

Interconnection Customer: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

Distribution Provider's Operating Representative:

Distribution Provider: _____
Attention: _____
Address: _____
City: _____ State:_____ Zip:_____
Phone: _____ Fax: _____

13.5 Changes to the Notice Information
Either Party may change this information by giving five Business Days written notice prior to the effective date of the change.

Article 14. Signatures

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective duly authorized representatives.

For the Distribution Provider

Name: _____

Title: _____

Date: _____

For the Interconnection Customer

Name: _____

Title: _____

Date: _____

Attachment 1

Glossary of Terms

Affected System - An electric system other than the Distribution Provider's Distribution System that may be affected by the proposed interconnection, including but not limited to the Transmission System.

Applicable Laws and Regulations - All duly promulgated applicable federal, state and local laws, regulations, rules, ordinances, codes, decrees, judgments, directives, or judicial or administrative orders, permits and other duly authorized actions of any Governmental Authority.

Business Day - Monday through Friday, excluding Federal and State Holidays.

Default - The failure of a breaching Party to cure its breach under the Agreement.

Distribution Owner - The entity that owns, leases or otherwise possesses an interest in the portion of the Distribution System at the Point of Interconnection and may be a Party to the Agreement to the extent necessary.

Distribution Provider - The public utility (or its designated agent) that owns, controls, or operates transmission or distribution facilities used for the transmission of electricity and provides distribution service to the Interconnection Customer. The term Distribution Provider should be read to include the Distribution Owner when the Distribution Owner is separate from the Distribution Provider.

Distribution System - Those non-CAISO transmission and distribution facilities, owned, controlled and operated by the Distribution Provider that are used to provide distribution service, which facilities and equipment are used to transmit electricity to ultimate usage points such as homes and industries directly from nearby generators or from interchanges with higher voltage transmission networks which transport bulk power over longer distances. The voltage levels at which Distribution Systems operate differ among areas.

Distribution Upgrades - The additions, modifications, and upgrades to the Distribution Provider's Distribution System at or beyond the Point of Interconnection to facilitate interconnection of the Generating Facility. Distribution Upgrades do not include Interconnection Facilities.

Fast Track Process - The interconnection study process set forth in Section F.2 of Rule 21.

Generating Facility -The Interconnection Customer's device for the production or storage of electricity identified in Attachment 2 of the Agreement, but shall not include the Interconnection Customer's Interconnection Facilities.

Good Utility Practice - Any of the practices, methods and acts engaged in or approved by a

significant portion of the electric industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.

Governmental Authority - Any federal, state, local or other governmental regulatory or administrative agency, court, commission, department, board, or other governmental subdivision, legislature, rulemaking board, tribunal, or other governmental authority having jurisdiction over the Parties, their respective facilities, or the respective services they provide, and exercising or entitled to exercise any administrative, executive, police, or taxing authority or power; provided, however, that such term does not include the Interconnection Customer, the Distribution Provider, or any Affiliate thereof.

Interconnection Customer - Any entity, including the Distribution Provider, Distribution Owner or any of the affiliates or subsidiaries of either, that proposes to interconnect its Generating Facility with the Distribution Provider's Distribution System. The definition of "Interconnection Customer" in this Agreement is intended to be identical to and used interchangeably with the definition of "Producer" in Rule 21.

Interconnection Facilities - The Distribution Provider's Interconnection Facilities and the Interconnection Customer's Interconnection Facilities. Collectively, Interconnection Facilities include all facilities and equipment between the Generating Facility and the Point of Interconnection, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Generating Facility to the Distribution Provider's Distribution System. Interconnection Facilities are sole use facilities and shall not include Distribution Upgrades or Network Upgrades.

Interconnection Handbook - A handbook, developed by the Distribution Provider and posted on the Distribution Provider's website or otherwise made available by the Distribution Provider, describing the technical and operational requirements for wholesale generators and loads connected to the Distribution System, as such handbook may be modified or superseded from time to time. In the event of a conflict between the terms of this Agreement and the terms of the Distribution Provider's Interconnection Handbook, the terms in this Agreement shall govern.

by Local Furnishing Bonds.

Network Upgrades - Additions, modifications, and upgrades to the Distribution Provider's Transmission System required at or beyond the point at which the Distribution System connects to the Distribution Provider's Transmission System to accommodate the interconnection of the Generating Facility to the Distribution Provider's Distribution System. Network Upgrades do not include Distribution Upgrades.

Operating Requirements - Any operating and technical requirements that may be applicable due to Regional Transmission Organization, the CAISO, balancing authority area, or the

Distribution Provider's requirements, including those set forth in the Agreement.

Party or Parties - The Distribution Provider, Distribution Owner, Interconnection Customer, Producer or any combination of the above.

Point of Interconnection - The point where the Interconnection Facilities connect with the Distribution Provider's Distribution System.
Reasonable Efforts - With respect to an action required to be attempted or taken by a Party under the Agreement, efforts that are timely and consistent with Good Utility Practice and are otherwise substantially equivalent to those a Party would use to protect its own interests.

Transmission System - Those facilities owned by the Distribution Provider that have been placed under the CAISO's operational control and are part of the CAISO Grid.

Upgrades - The required additions and modifications to the Distribution Provider's Distribution System and Transmission System at or beyond the Point of Interconnection. Upgrades may be Network Upgrades or Distribution Upgrades. Upgrades do not include Interconnection Facilities.

Attachment 2

Description and Costs of the Generating Facility, Interconnection Facilities, and Metering Equipment

Equipment, including the Generating Facility, Interconnection Facilities, and metering equipment shall be itemized and identified as being owned by the Interconnection Customer, the Distribution Provider, or the Distribution Owner. The Distribution Provider will provide a best estimate itemized cost, including overheads, of its Interconnection Facilities and metering equipment, and a best estimate itemized cost of the annual operation and maintenance expenses associated with its Interconnection Facilities and metering equipment.

Attachment 3

One-line Diagram Depicting the Generating Facility, Interconnection Facilities, Metering Equipment, and Upgrades

Attachment 4

Milestones

In-Service Date: _____

Critical milestones and responsibility as agreed to by the Parties:

	Milestone/Date	Responsible Party
(1)	_____	_____
(2)	_____	_____
(3)	_____	_____
(4)	_____	_____
(5)	_____	_____
(6)	_____	_____
(7)	_____	_____
(8)	_____	_____
(9)	_____	_____
(10)	_____	_____

Agreed to by:

For the Distribution Provider_____ Date_____

For the Distribution Owner (If Applicable) _____ Date_____

For the Interconnection Customer_____ Date_____

Attachment 5

Additional Operating Requirements for the Distribution Provider's Distribution System and Affected Systems Needed to Support the Interconnection Customer's Needs

The Distribution Provider shall also provide requirements that must be met by the Interconnection Customer prior to initiating parallel operation with the Distribution Provider's Distribution System.

Attachment 6

Distribution Provider's Description of its Upgrades and Cost Responsibility

The Distribution Provider shall describe Upgrades and provide an itemized best estimate of the cost, including overheads, of the Upgrades and annual operation and maintenance expenses associated with such Upgrades. The Distribution Provider shall functionalize Upgrade costs and annual expenses as either transmission or distribution related.

SDG&E'S RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST

1. The undersigned Applicant submits this request to interconnect its Generating Facility with Distribution Provider's Distribution System pursuant to Rule 21 (check only one):
   - ☐ Detailed Study Process
   - ☐ Fast Track Process

2. This Interconnection Request is for (check only one):
   - ☐ A proposed new Generating Facility.
   - ☐ An increase in the generating capacity or a Material Modification of an existing Generating Facility.

3. Applicant provides the following information:

   a. Address (to the extent known) or location, including the county, of the proposed new Generating Facility site or, in the case of an existing Generating Facility, the name and specific location, including the county, of the existing Generating Facility;

      Project Name:

      Project Location:
      Street Address:
      City, State:
      County:
      Zip Code:
      GPS Coordinates:

   b. Maximum net megawatt electrical output (as defined by section 2.c. of Attachment A to this appendix) of the proposed new Generating Facility or the amount of net megawatt increase in the generating capacity of an existing Generating Facility;

      Maximum net megawatt electrical output (MW): _____ or
      Net Megawatt increase (MW): _____

   c. Type of project (i.e., gas turbine, hydro, wind, etc.) and general description of the equipment configuration (if more than one type is chosen, include net MW for each);

      ___ Cogeneration _____ MW
      ___ Reciprocating Engine _____ MW
      ___ Biomass _____ MW
      ___ Steam Turbine _____ MW
      ___ Gas Turbine _____ MW
      ___ Wind _____ MW

___ Hydro _____ MW
___ Inverter Based: (e.g., Photovoltaic, Fuel Cell) _____ MW
If Fuel Cell, please describe primary fuel source:
___ Combined Cycle _____ MW
___ Other (please describe):_____

d. Proposed In-Service Date, and Other Key Dates (Day/Month/Year) (Dates must be sequential)

Proposed In-Service Date: / /
Proposed Trial Operation Date: / /
Proposed Commercial Operation Date: / /
Proposed Term of Service (years): _____

e. Name, address, telephone number, and e-mail address of Applicant (primary person who will be contacted);

Name:
Title:
Company Name:
Street Address:
City, State:
Zip Code:
Phone Number:
Fax Number:
Email Address:

f. Approximate location of the proposed Point of Interconnection (i.e., specify distribution facility interconnection point name, voltage level, and the location of interconnection);

g. Applicant Data (set forth in Attachment A)

The Applicant shall provide to the Distribution Provider the technical data called for in Attachment A.

h. AC Disconnect Switch. List the AC disconnect switch that will be used at this Generating Facility (enter "N/A" if not applicable):

Disconnect Switch Manufacturer
Disconnect Switch Model Number
Disconnect Switch Rating (amps)

i. For purposes of an assessment of the effect, if any, on SDG&E's Local Furnishing Bonds, does Applicant intend to enter into a purchase power agreement only with SDG&E? For purposes of this item, Local Furnishing Bonds shall mean the tax-exempt bonds utilized to finance facilities for the local furnishing of electric energy, as described in section 142(f) of the Internal Revenue Code, 26 U.S.C. § 142(f).

4. Application Fee or Detailed Study Deposit as specified in Rule 21 is required to complete this application. Upon receipt of this Interconnection Request and Attachment A, SDG&E will send a separate invoice for the applicable fee or deposit. **PLEASE DO NOT INCLUDE ANY CHECKS/MONIES WITH THIS INTERCONNECTION REQUEST**. (Any checks/monies submitted with this IR will be returned to the sender and may result in a delay in the application process.)

5. Attach evidence of Site Exclusivity as specified in Rule 21 Section E.2.d as applicable, and name(s), address(es) and contact information of site owner(s).

6. This Interconnection Request shall be submitted digitally with attachments by email to:

DGAPPLICATIONS@semprautilities.com

or by mail to:

San Diego Gas & Electric
Attn: Customer Generation
8316 Century Park Court CP52F
San Diego, CA 92123-1582

Overnight address:
San Diego Gas & Electric
Attn: Customer Generation
8316 Century Park Court CP52F
San Diego, CA 92123-1582

7 Representative of Applicant to contact:

[To be completed by Applicant]
Name:
Title:
Company Name:
Street Address:
City, State:
Zip Code:
Phone Number:
Fax Number:
Email Address:

8. If the Applicant also requires new Distribution Service, the Distribution Provider will coordinate these efforts as a function of this application. More information may be requested.

9. Applicant should be aware that if Applicant has not yet received Rule 21 Screen Q results from SDG&E by March 15 following submittal of this IR, Applicant will need to submit, if Applicant voluntarily chooses to do so, an Interconnection Request under Distribution Provider's FERC Wholesale Open Access Distribution Tariff (WDAT) by the close of the CAISO cluster application window(refer to http://www.caiso.com/docs/2002/06/11/2002061110300427214.html for the exact date) in order to participate in the Transmission Cluster Study for the year. An application under WDT will not impact the results of this Rule 21 study.

10. This Interconnection Request is submitted by:

Legal name of Applicant: _____

By (signature): _____

Name (type or print): _____

Title: _____

Date: _____

Attachment A to
SDG&E's Rule 21 Exporting Generator Interconnection Request

GENERATING FACILITY DATA

Each Applicant will complete Sections 1 and 2 of this Attachment A.
Each Applicant will complete the applicable data in Sections 3 through 6 of this Attachment A based on the type of generating facility(ies) requesting interconnection. (Section 3 for synchronous generators, Section 4 for induction generators, Section 5 for wind turbine generators, and Section 6 for inverter-based generators).
Each Applicant will complete Sections 7 through 10, as applicable.
At any time, Distribution Provider may require Applicant to provide additional technical data, or additional documentation supporting the technical data provided, as deemed necessary by the Distribution Provider to perform Interconnection Studies, other studies, or evaluations as set forth under Rule 21.

1. Provide two original prints (no larger than 11" x 17") and one electronic copy of the following:

A. Site drawing to scale, showing generator location and Point of Interconnection with the Distribution Provider's Distribution System.
B. Single-line diagram showing applicable equipment such as generating units, step-up transformers, auxiliary transformers, switches/disconnects of the proposed interconnection, including the required protection devices and circuit breakers. For wind and photovoltaic generator projects, the one line diagram should include the distribution lines connecting the various groups of generating units, the generator capacitor banks, the step up transformers, the distribution lines, and the substation transformers and capacitor banks at the Point of Interconnection with the Distribution Provider's Distribution System. This one-line drawing must be signed and stamped by a licensed Professional Engineer if the Generating Facility is larger than 50 kW.
C. AC and DC schematics if available. Required for detailed study process.
D. Description of operations.

2. Generating Facility General Information:

A. Total Generating Facility rated output (MW): _____
B. Generating Facility auxiliary Load (MW): _____
C. Project net capacity (MW): _____
D. Standby Load when Generating Facility is off-line (MW): _____
E. Number of Generating Units: _____
(Please repeat the following items for each generator)
F. Individual generator rated output (MW for each unit): _____
G. Type (induction, synchronous, D.C. with inverter): _____
H. Phase (3 phase or single phase): _____

3. Synchronous Generator –Information:

3A Generator Information:
(Please repeat the following for each generator)

A. Manufacturer: _____
B. Year Manufactured:_____
C. Rated Generator speed (rpm):_____
D. Rated MVA: _____
E. Rated Terminal Voltage (kV): _____
F. Rated Generator Power Factor Range: _____
G. Generator Efficiency at Rated Load (%): _____
H. Moment of Inertia (including prime mover): _____
I. Inertia Time Constant (on machine base) H: _____ sec or MJ/MVA
J. SCR (Short-Circuit Ratio - the ratio of the field current required for rated open-circuit voltage to the field current required for rated short-circuit current):
_____
K. Please attach generator reactive capability curves.
L. Rated Hydrogen Cooling Pressure in psig (Steam Units only):
_____
M. Please attach a plot of generator terminal voltage versus field current that shows the air gap line, the open-circuit saturation curve, and the saturation curve at full load and rated power factor.

3B Excitation System Information:
(Please repeat the following for each generator)

A. Indicate the Manufacturer _____ and Type _____of excitation system used for the generator. For exciter type, please choose from 1 to 9 below or describe the specific excitation system.
(1) Rotating DC commutator exciter with continuously acting regulator. The regulator power source is independent of the generator terminal voltage and current.
(2) Rotating DC commentator exciter with continuously acting regulator. The regulator power source is bus fed from the generator terminal voltage.
(3) Rotating DC commutator exciter with non-continuously acting regulator (i.e., regulator adjustments are made in discrete increments).
(4) Rotating AC Alternator Exciter with non-controlled (diode) rectifiers. The regulator power source is independent of the generator terminal voltage and current (not bus-fed).
(5) Rotating AC Alternator Exciter with controlled (thyristor) rectifiers. The regulator power source is fed from the exciter output voltage.
(6) Rotating AC Alternator Exciter with controlled (thyristor) rectifiers.
(7) Static Exciter with controlled (thyristor) rectifiers. The regulator power

source is bus-fed from the generator terminal voltage.

(8) Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from a combination of generator terminal voltage and current (compound-source controlled rectifiers system.

(9) Other (specify): _____

B. Attach a copy of the block diagram of the excitation system from its instruction manual. The diagram should show the input, output, and all feedback loops of the excitation system.

C. Excitation system response ratio (ASA): _____

D. Full load rated exciter output voltage: _____

E. Maximum exciter output voltage (ceiling voltage): _____

F. Other comments regarding the excitation system? _____
_____

3C Power System Stabilizer Information:

(Please repeat the following for each generator 30 MW or larger.)

A. Manufacturer: _____

B. Is the PSS digital or analog? _____

C. Note the input signal source for the PSS?
_____ Bus frequency _____ Shaft speed _____
Bus Voltage _____ Other (specify source)

D. Please attach a copy of a block diagram of the PSS from the PSS Instruction Manual and the correspondence between dial settings and the time constants or PSS gain.

E. Other comments regarding the PSS?
_____
_____
_____

3D Turbine-Governor Information:

(Please repeat the following for each generator)

Please complete Part A for steam, gas or combined-cycle turbines, Part B for hydro turbines, and Part C for both.

A. Steam, gas or combined-cycle turbines:

(1) List type of unit (Steam, Gas, or Combined-cycle):_____

(2) If steam or combined-cycle, does the turbine system have a reheat process (i.e., both high and low pressure turbines)? _____

(3) If steam with reheat process, or if combined-cycle, indicate in the space provided, the percent of full load power produced by each turbine:
Low pressure turbine or gas turbine:_____%
High pressure turbine or steam turbine:_____%

(4) For combined cycle plants, specify the plant net output capacity (MW) for an outage of the steam turbine or an outage of a single combustion turbine:_____

B. Hydro turbines:

(1) Turbine efficiency at rated load: _____%
(2) Length of penstock: _____ft
(3) Average cross-sectional area of the penstock: _____ft2
(4) Typical maximum head (vertical distance from the bottom of the penstock, at the gate, to the water level): _____ft
(5) Is the water supply run-of-the-river or reservoir: _____
(6) Water flow rate at the typical maximum head: _____ft^3/sec
(7) Average energy rate: _____kW-hrs/acre-ft
(8) Estimated yearly energy production: _____kW-hrs

C. Complete this section for each machine, independent of the turbine type.

(1) Turbine manufacturer: _____
(2) Maximum turbine power output: _____MW
(3) Minimum turbine power output (while on line): _____MW
(4) Governor information:
(a) Droop setting (speed regulation): _____
(b) Is the governor mechanical-hydraulic or electro-hydraulic (Electro-hydraulic governors have an electronic speed sensor and transducer.)? _____
(c) Other comments regarding the turbine governor system?
_____
_____
_____
_____

3E Short Circuit Duty Information:
For each generator, provide the following reactances expressed in p.u. on the generator base:

- Xd – Direct Axis Synchronous Reactance: _____ p.u.
- X'd – Direct Axis Transient Reactance: _____ p.u.
- X"d – Direct Axis Subtransient Reactance: _____ p.u.
- X_1 – Positive Sequence Reactance: _____ p.u.
- X2 – Negative Sequence Reactance: _____ p.u.
- X0 – Zero Sequence Reactance: _____ p.u.
- R_1 – Positive Sequence Resistance: _____ p.u.
- R_2 – Negative Sequence Resistance: _____ p.u.

R_0 – Zero Sequence Resistance: _____ p.u.

Generator Grounding (select one for each model):

A. _____ Solidly grounded
B. _____ Grounded through an impedance
(Impedance value in p.u. on generator base. R:_____p.u.
X:_____p.u.)
C. _____ Ungrounded

4. Induction Generator Information:
(Please repeat the following for each generator)

A. Motoring Power (kW): _____
B. I_2^2t or K (Heating Time Constant): _____
C. Rotor Resistance, Rr: _____
D. Stator Resistance, Rs: _____
E. Stator Reactance, Xs: _____
F. Rotor Reactance, Xr: _____
G. Magnetizing Reactance, Xm: _____
H. Short Circuit Reactance, Xd": _____
I. Exciting Current: _____
J. Temperature Rise: _____
K. Frame Size: _____
L. Design Letter: _____
M. Reactive Power Required In Vars (No Load): _____
N. Reactive Power Required In Vars (Full Load): _____
O. Total Rotating Inertia, H: _____ Per Unit on kVA Base

5. Wind Turbine Generator (WTG) Information:

(Proposed projects may include one or more WTG types. Please repeat the following for each type of WTG).

A. WTG Manufacturer and Model: _____
B. Number of WTGs: _____
C. WTG Type (check one):
_____ Type 1 (Squirrel-cage induction generator)
_____ Type 2 (Wound rotor induction machine with variable rotor resistance)
_____ Type 3 (Doubly-fed asynchronous generator)
_____ Type 4 (Full converter interface)
D. Nameplate Rating (each WTG): _____/_____ kW/kVA
E. Rated Terminal Voltage: _____ kV
F. For Type 1 or Type 2 WTGs:
(1) uncompensated power factor at full load: _____
(2) power factor correction capacitors at full load: _____MVAR
(3) number of shunt stages and size: _____

(4) Please attach capability curve describing reactive power or power factor range from no output to full rated output, including the effect of shunt compensation

G. For Type 3 or Type 4 WTGs:
(1) Maximum under-excited power factor at full load: _____
(2) Maximum over-excited power factor at full load: _____
(3) Control mode: _____ (voltage control, fixed power factor)
(4) Please attach capability curve describing reactive power or power factor range from no output to full rated output

H. Short Circuit Characteristics: Applicant to provide technical data related to the short circuit characteristics of proposed WTGs for short circuit duty study modeling purposes. For example, the applicant can provide manufacturer short circuit test data showing faulted condition for three phase and single-line-to-ground fault.

Distribution Provider may require testing verification of voltage and harmonic performance during commissioning test of WTG based generation projects.

6. Inverter Based Generation Systems Information:

Proposed inverter based generation projects may include one or more types of inverters. Please repeat the following for each type of inverter.

A. Inverter Manufacturer and Model: _____
B. Number of Inverters: _____
C. Nameplate Rating (AC, each inverter): _____/_____ kW
D. Nameplate Voltage Rating (AC): _____ kV
E. Maximum AC line current: _____ Amps
F. Nameplate Power Factor Rating (AC): _____
G. Please attach capability curve describing reactive power or power factor range from no output to full rated output
H. Inverter control mode (e.g. voltage, power factor, reactive power): _____
I. Short Circuit Characteristics: Applicant to provide technical data related to the short circuit characteristics of proposed inverter based generation systems. For example, the applicant can provide a sinusoidal waveform test data and/or manufacturers data showing faulted condition at the AC side of the inverter for a three phase and single-line-to-ground fault.
J. Harmonics Characteristics:
(1) Inverter switching frequency: _____
(2) Harmonic characteristics for each unit up to switching frequency: _____
(3) Harmonic characteristics for aggregate generation facility: _____
K. Inverter disconnection characteristics: Applicant to provide voltage sinusoidal waveform test data and/or manufacturers data which shows the voltage characteristics during disconnection of inverter system from distribution system at 100% and at 50% of rated output.

Distribution Provider may require testing verification of voltage and harmonic performance during commissioning test of the inverter based generation systems.

7. Step-Up Transformer Data:

For each step-up transformer (e.g. main step-up transformers, padmount transformers), fill out the data form provided in Table 1.

8. Plant-Level Reactive Power Compensation Data:
Provide the following information for plant-level reactive power compensation, if applicable:

A. Number of individual shunt capacitor banks: _____
B. Individual shunt capacitor bank rated voltage (kV): _____
C. Individual shunt capacitor bank size (kVAR at rated voltage): _____
D. Planned dynamic reactive control devices (SVC, STATCOM): _____
E. Control range: _____ kVAR (lead) _____ kVAR (lag)
F. Control mode (e.g. voltage, power factor, reactive power): _____
G. Please provide the overall plant reactive power control strategy

9. Load Flow and Dynamic Models:
Only provide data in this section when requested by the Distribution Provider.

The WECC Data Preparation Manual for Power Flow Base Cases and Dynamic Stability Data has established power flow and dynamic modeling requirements for generation projects in WECC base cases. In general, if the aggregate sum of generation on a bus exceeds 10 MVA, it should not be netted. Furthermore, the total netted generation in an area should not exceed five percent of the area's total generation. Based on current WECC modeling requirements, the following information will be required for all generation projects whose net capacity is greater than 10 MVA. The following information may also be required for generation projects less than 10 MVA on a case-by-case basis, based on the amount of generation in the area of the requested Point of Interconnection.

A. Provide load flow model for the generating plant and its interconnection facilities in GE PSLF *.epc format, including new buses, generators, transformers, interconnection facilities. An equivalent model is required for the plant with generation collector systems. This data should reflect the technical data provided in this Attachment A.

B. For each generator, governor, exciter, power system stabilizer, WTG, or inverter based generator, select the appropriate dynamic models from the General Electric PSLF Program Manual and provide the required input data. Include any user written *.p EPCL files to simulate inverter based plants' dynamic responses (typically needed for inverter based PV/wind plants). Provide a completed *.dyd file that contains the information specified in this section.

The GE PSLF manual is available upon request from GE. There are links within the GE PSLF User's Manual to detailed descriptions of specific models, a definition of each parameter, a list of the output channels, explanatory notes, and a control system block diagram. In addition, GE PSLF modeling information and various modeling guidelines documents have been prepared

by the WECC Modeling and Validation Work Group. This information is available on the WECC website (www.wecc.biz).

If you require assistance in developing the models, we suggest you contact General Electric. Accurate models are important to obtain accurate study results. Costs associated with any changes in facility requirements that are due to differences between model data provided by the generation developer and the actual generator test data, may be the responsibility of the generation developer.

TABLE 1

TRANSFORMER DATA
(Provide for each level of transformation)

UNIT_____

NUMBER OF TRANSFORMERS_____ PHASE _____

RATING	H Winding	X Winding	Y Winding
Rated MVA	_____	_____	_____
Connection (Delta, Wye, Gnd.)	_____	_____	_____
Cooling Type (OA,OA/FA, etc) :	_____	_____	_____
Temperature Rise Rating	_____	_____	_____
Rated Voltage	_____	_____	_____
BIL	_____	_____	_____
Available Taps (% of rating)	_____	_____	_____
Load Tap Changer? (Y or N)	_____	_____	_____
Tap Settings	_____	_____	_____
IMPEDANCE	H-X	H-Y	X-Y
Percent	_____	_____	_____
MVA Base	_____	_____	_____
Tested Taps	_____	_____	_____
WINDING RESISTANCE	H	X	Y
Ohms	_____	_____	_____

CURRENT TRANSFORMER RATIOS

H_____ X_____ Y_____ N_____

PERCENT EXCITING CURRENT 100 % Voltage; _____ 110% Voltage_____
Supply copy of nameplate and manufacturer's test report when available.

ATTACHMENT B

Recommended Scope of Phase 2 Issues

1. Telemetering/other metering requirements.
2. Reconsideration of technical limits within Rule 21: Fast Track size limits, 15% screen, development of further objective criteria.
3. Cost allocation and certainty issues, including but not limited to: earlier cost certainty, cost averaging, cost sharing, distribution system upgrades appropriate for rate-based support, data reporting to improve cost predictability, cost assignment of planned distribution system upgrades, curtailment as a method of avoiding triggered upgrades, development of an online portal for applying for a Pre-Application Report.
4. Study Deposits, pursuant to which the IOUs shall collect and provide data on the actual cost of system impact studies and facilities studies.
5. The Distribution Group Study Process.
6. Reconsideration of timelines, timeline compliance, and timeline remedies in the Revised Rule 21 Tariff, if and only if a party reasonably establishes the need for reconsideration.

ATTACHMENT C

Minimum Engineering Review Data to be Included in the Reporting Proposal

Identification of the engineering analysis results for each Interconnection Request, as follows:

1. Whether the Interconnection Request passed Initial Review, and if not, which screen or screens caused the Interconnection Request to be evaluated pursuant to Supplemental Review, the Independent Study Process, or the Cluster Study Process;

2. Whether the Distribution Provider, upon receipt of a complete and valid Interconnection Request, completed the Initial Review and notified the Applicant of the Initial Review results within the time specified in the Revised Rule 21 Tariff (or a mutually agreed upon date), and if not, how many additional Business Days before the Distribution Provider completed the Initial Review and notified the Applicant of the results of the Initial Review;

3. If evaluated pursuant to Supplemental Review, whether the Interconnection Request passed Supplemental Review, and if not, which screen caused the Interconnection Request to be placed in the Independent Study Process or the Cluster Study Process;

4. If evaluated pursuant to Supplemental Review, and upon authorization by the Applicant and receipt of the Supplemental Review fees from the Applicant, whether the Distribution Provider completed the Supplemental Review and notified the Applicant of the results of the Supplemental Review within the time specified in the Revised Rule 21 Tariff (or a mutually agreed upon date), and if not, how many additional Business Days before the Distribution Provider completed the Supplemental Review and notified the Applicant of the results of the Supplemental Review;

5. If subject to the Electrical Independence Test, results of the Electrical Independence Test (i.e. whether the Transmission Cluster Study Process, Independent Study Process, or Distribution Cluster Study Process is indicated);

6. If subject to review under Screen Q and/or R, and upon validation of the Interconnection Request and receipt of appropriate study fees from the Applicant, whether the Distribution Provider completed this Screen Q and/or R analysis within the time specified in the Revised Rule 21 Tariff (or a mutually agreed upon date), and if not, how many additional Business Days before the Distribution Provider completed this Screen Q and/or R analysis and notified the Applicant of the results of the Screen Q and/or R analysis;

7. If applicable, and after the execution of an Independent Study Process Study Agreement, whether the Distribution Provider completed an Interconnection System Impact Study within the time specified in the Revised Rule 21 Tariff (or a mutually agreed upon date), and if not, how many additional Calendar Days/Business Days before the Distribution Provider completed and issued this Interconnection System Impact Study;

8. If applicable, where Distribution Upgrades or Network Upgrades are identified and upon the posting by the Applicant of the initial Interconnection Financial Security deposit, whether Distribution Provider completed an Interconnection Facilities Study within the time specified in the Revised Rule 21 Tariff (or a mutually agreed upon date), and if not, how many additional Calendar Days/Business Days before the Distribution Provider completed and issued this Interconnection Facilities Study;

9. If applicable, where no Distribution Upgrades and/or Network Upgrades are identified and upon the posting by the Applicant of the initial Interconnection Financial Security deposit, whether Distribution Provider completed an Interconnection Facilities Study within the time specified in the Revised Rule 21 Tariff (or a mutually agreed upon date), and if not, how many additional Calendar Days/Business Days before the Distribution Provider completed and issued this Interconnection Facilities Study.

ATTACHMENT B

Recommended Scope of Phase 2 Issues

1. Telemetering/other metering requirements.
2. Reconsideration of technical limits within Rule 21: Fast Track size limits, 15% screen, development of further objective criteria.
3. Cost allocation and certainty issues, including but not limited to: earlier cost certainty, cost averaging, cost sharing, distribution system upgrades appropriate for rate-based support, data reporting to improve cost predictability, cost assignment of planned distribution system upgrades, curtailment as a method of avoiding triggered upgrades, development of an online portal for applying for a Pre-Application Report.
4. Study Deposits, pursuant to which the IOUs shall collect and provide data on the actual cost of system impact studies and facilities studies.
5. The Distribution Group Study Process.
6. Reconsideration of timelines, timeline compliance, and timeline remedies in the Revised Rule 21 Tariff, if and only if a party reasonably establishes the need for reconsideration.

ATTACHMENT C

Minimum Engineering Review Data to be Included in the Reporting Proposal

Identification of the engineering analysis results for each Interconnection Request, as follows:

1. Whether the Interconnection Request passed Initial Review, and if not, which screen or screens caused the Interconnection Request to be evaluated pursuant to Supplemental Review, the Independent Study Process, or the Cluster Study Process;

2. Whether the Distribution Provider, upon receipt of a complete and valid Interconnection Request, completed the Initial Review and notified the Applicant of the Initial Review results within the time specified in the Revised Rule 21 Tariff (or a mutually agreed upon date), and if not, how many additional Business Days before the Distribution Provider completed the Initial Review and notified the Applicant of the results of the Initial Review;

3. If evaluated pursuant to Supplemental Review, whether the Interconnection Request passed Supplemental Review, and if not, which screen caused the Interconnection Request to be placed in the Independent Study Process or the Cluster Study Process;

4. If evaluated pursuant to Supplemental Review, and upon authorization by the Applicant and receipt of the Supplemental Review fees from the Applicant, whether the Distribution Provider completed the Supplemental Review and notified the Applicant of the results of the Supplemental Review within the time specified in the Revised Rule 21 Tariff (or a mutually agreed upon date), and if not, how many additional Business Days before the Distribution Provider completed the Supplemental Review and notified the Applicant of the results of the Supplemental Review;

5. If subject to the Electrical Independence Test, results of the Electrical Independence Test (i.e. whether the Transmission Cluster Study Process, Independent Study Process, or Distribution Cluster Study Process is indicated);

6. If subject to review under Screen Q and/or R, and upon validation of the Interconnection Request and receipt of appropriate study fees from the Applicant, whether the Distribution Provider completed this Screen Q and/or R analysis within the time specified in the Revised Rule 21 Tariff (or a mutually agreed upon date), and if not, how many additional Business Days before the Distribution Provider completed this Screen Q and/or R analysis and notified the Applicant of the results of the Screen Q and/or R analysis;

7. If applicable, and after the execution of an Independent Study Process Study Agreement, whether the Distribution Provider completed an Interconnection System Impact Study within the time specified in the Revised Rule 21 Tariff (or a mutually agreed upon date), and if not, how many additional Calendar Days/Business Days before the Distribution Provider completed and issued this Interconnection System Impact Study;

8. If applicable, where Distribution Upgrades or Network Upgrades are identified and upon the posting by the Applicant of the initial Interconnection Financial Security deposit, whether Distribution Provider completed an Interconnection Facilities Study within the time specified in the Revised Rule 21 Tariff (or a mutually agreed upon date), and if not, how many additional Calendar Days/Business Days before the Distribution Provider completed and issued this Interconnection Facilities Study;

9. If applicable, where no Distribution Upgrades and/or Network Upgrades are identified and upon the posting by the Applicant of the initial Interconnection Financial Security deposit, whether Distribution Provider completed an Interconnection Facilities Study within the time specified in the Revised Rule 21 Tariff (or a mutually agreed upon date), and if not, how many additional Calendar Days/Business Days before the Distribution Provider completed and issued this Interconnection Facilities Study.

(END OF ATTACHMENT A)

ATTACHMENT B

DRAFT

FILED
04-23-12
04:59 PM

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking on the Commission's own motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources.	Rulemaking 11-09-011 (Filed September 22, 2011)

PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E) MOTION TO ADOPT A RULE 21 TRANSITION PLAN

RANDALL J. LITTENEKER
STACY W. WALTER

Pacific Gas and Electric Company
77 Beale Street
San Francisco, CA 94105
Telephone: (415) 973-6611
Facsimile: (415) 973-0516
E-Mail: sww9@pge.com

Attorneys for
PACIFIC GAS AND ELECTRIC COMPANY

April 23, 2012

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's own motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources.	Rulemaking 11-09-011 (Filed September 22, 2011)

PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)
MOTION TO ADOPT A RULE 21 TRANSITION PLAN

I. INTRODUCTION

Pursuant to Rule 11.1 of the Rules of Practice and Procedure of the California Public Utilities Commission (Commission) and in compliance with Administrative Law Judge DeAngelis's *Ruling Granting the Motion of Vote Solar,* issued on April 20, 2012, Pacific Gas and Electric Company (PG&E) makes this *Motion to Adopt a Rule 21 Transition Plan.* Currently pending before the Commission is the March 16, 2012, *Motion for Approval 0f Settlement Agreement Revising Distribution Level Interconnection Rules and Regulations* ("Settlement Motion"). Included in the Settlement Motion is a package of documents that includes an updated and improved Rule 21 tariff and associated forms and agreements ("Revised Rule 21"). Since there will be a period of time needed for the Commission to review and reach a decision regarding the Settlement Motion, it is important to seek Commission guidance on the transition from the currently approved Rule 21 ("Existing Rule 21") to the Revised Rule 21.

PG&E does not have a pre-existing queue with pending interconnection requests for Rule 21 wholesale projects. However, there is the possibility that wholesale generators eligible for

interconnection under Rule 21[1/] may request such an interconnection from PG&E prior to Commission action on the Settlement Motion. In addition, there are a number of other Rule 21 eligible generators currently in process under the Existing Rule 21. To address the needs of the various types of Rule 21 generators, PG&E has a two-part proposal.

First, PG&E proposes that generators using Commission approved pro forma applications and interconnection agreements that are currently in process to interconnect under Existing Rule 21 (such as net energy metering and non-export generators) continue under the Existing Rule 21 until the effective date established when the Commission approves a Revised Rule 21. Second, PG&E proposes that wholesale generators eligible for interconnection under the Revised Rule 21 be permitted to submit the Interconnection Request included here as Attachment A, currently pending Commission approval, and proceed under the portions of the Revised Rule 21 outlined in more detail below. Since the Commission has not yet acted on the Revised Rule 21, these generators will also be required to submit the Interim Agreement form included in Attachment B, providing that both the generator and PG&E will agree to modify the Revised Rule 21 forms, requirements and agreements as needed to comply with any changes the Commission may make to the pending Revised Rule 21 as part of its review and approval process.

II. DISCUSSION

A. Ongoing Rule 21 Interconnections Should Continue under the Existing Rule 21 Until the Revised Rule 21 is Approved by the Commission

PG&E has a number of generators that are in the Rule 21 interconnection process using existing pro forma forms and agreements that are currently approved by the Commission. PG&E proposes that these generators, which include net energy metering and non-export projects, should continue under the Existing Rule 21 until the effective date established when the Commission approves the Revised Rule 21. There are a number of improvements in the Revised

1/ This interim option would apply to wholesale generators seeking distribution interconnections that are also Qualifying Facilities planning to sell all their exports to the grid to PG&E under a Public Utilities Regulatory Policy Act power purchase agreement (PURPA PPA) such as the AB 1613 feed in tariff program or other PURPA PPA type program.

Rule 21, including enhanced transparency, which will be helpful to this group of generators when approved. However, PG&E believes the existing Rule 21 works well for these interconnection applicants so there is no need to modify the interconnection process for this group in advance of Commission consideration and approval of the Revised Rule 21[2/].

B. Rule 21 Eligible Wholesale Generators Require Interim Treatment

PG&E's Existing Rule 21 lacks a transparent, established process and approved forms for processing the interconnection of new Rule 21 eligible wholesale generators. While PG&E does not have an existing Rule 21 backlog of wholesale projects like Southern California Edison Company, there is the possibility that some Rule 21 eligible wholesale applicants may seek interconnection under Rule 21 prior to Commission action on Revised Rule 21. For this reason PG&E proposes an interim approach for these generators that includes use of the proposed Interconnection Request pending Commission approval (Attachment A), along with execution of an Interim Agreement (Attachment B) making it clear that both the generator applicant and PG&E agree to modify the forms, processes and requirements in the event the Commission makes any revisions to the pending Revised Rule 21. In addition, for this group, PG&E proposes to apply the Revised Rule 21 tariff instead of the existing Rule 21 tariff, except for the following sections: Confidentiality, Section D.7; Pre-Application Report, Section E.1; Publication of the Interconnection Queue, Section E.5.d; Compliance with Timelines, Section F.1.d, and other sections not needed to move forward with the interconnection during the interim period. These excluded new sections of the Revised Rule 21 shall go into effect only after the Commission approves the Rule 21 settlement package. This interim plan will enable these projects to move forward in an orderly manner during Commission review and consideration of the complete Rule 21 settlement package.

2/ However, PG&E does encourage NEM applicants using non-certified equipment and/or non-inverter based technology to apply for interconnection six months in advance of their planned operation date consistent with the Revised Rule 21.

III. CONCLUSION

PG&E respectfully requests that the Commission adopt the Rule 21 transition plan proposed in this motion.

Respectfully submitted,

RANDALL J. LITTENEKER
STACY W. WALTER

By: /s/
STACY W. WALTER

Pacific Gas and Electric Company
77 Beale Street
San Francisco, CA 94105
Telephone: (415) 973-6611
Facsimile: (415) 973-0516
E-Mail: sww9@pge.com

Attorneys for
PACIFIC GAS AND ELECTRIC COMPANY

April 23, 2012

Pacific Gas and Electric Company™

WE DELIVER ENERGY.℠

RULE 21
EXPORTING GENERATOR
INTERCONNECTION REQUEST

1. The undersigned Applicant submits this request to interconnect its Generating Facility with the Pacific Gas and Electric Company (PG&E or Distribution Provider) Distribution System pursuant to Rule 21 (check only one):
   - ☐ Detailed Study Process
   - ☐ Fast Track Process

2. This Interconnection Request is for (check only one):
   - ☐ A proposed new Generating Facility.
   - ☐ An increase in the generating capacity or a Material Modification of an existing Generating Facility.

3. Applicant provides the following information:

   a. Address (to the extent known) or location, including the county, of the proposed new Generating Facility site or, in the case of an existing Generating Facility, the name and specific location, including the county, of the existing Generating Facility;

      Project Name:

      Project Location:
      Street Address:
      City, State:
      County:
      Zip Code:
      GPS Coordinates:

   b. Maximum net megawatt electrical output (as defined by section 2.c. of Attachment A to this appendix) of the proposed new Generating Facility or the amount of net megawatt increase in the generating capacity of an existing Generating Facility;

      Maximum net megawatt electrical output (MW): _____ or
      Net Megawatt increase (MW): _____

   c. Type of project (i.e., gas turbine, hydro, wind, etc.) and general description of the equipment configuration (if more than one type is chosen, include net MW for each);

___ Cogeneration _____ MW
___ Reciprocating Engine _____ MW
___ Biomass _____ MW
___ Steam Turbine _____ MW
___ Gas Turbine _____ MW
___ Wind _____ MW
___ Hydro _____ MW
___ Inverter Based: (e.g., Photovoltaic, Fuel Cell) _____ MW
If Fuel Cell, please describe primary fuel source:
___ Combined Cycle _____ MW
___ Other (please describe):_____

d. Proposed In-Service Date, and Other Key Dates (Day/Month/Year) (Dates must be sequential)

Proposed In-Service Date: / /
Proposed Trial Operation Date: / /
Proposed Commercial Operation Date: / /
Proposed Term of Service (years): _____

e. Name, address, telephone number, and e-mail address of Applicant (primary person who will be contacted);

Name:
Title:
Company Name:
Street Address:
City, State:
Zip Code:
Phone Number:
Fax Number:
Email Address:

f. Approximate location of the proposed Point of Interconnection (i.e., specify distribution facility interconnection point name, voltage level, and the location of interconnection);

g. Applicant Data (set forth in Attachment A)

The Applicant shall provide to the Distribution Provider the technical data called for in Attachment A.

h. AC Disconnect Switch. List the AC disconnect switch that will be used at this Generating Facility (enter "N/A" if not applicable)

Disconnect Switch Manufacturer: _____
Disconnect Switch Model Number: _____
Disconnect Switch Rating (amps): _____

4. Application Fee or Detailed Study Deposit as specified in Rule 21 is required to complete this application. Upon receipt of this Interconnection Request and Attachment A, PG&E will send a separate invoice for the applicable fee or deposit. **PLEASE DO NOT INCLUDE ANY CHECKS/MONIES WITH THIS INTERCONNECTION REQUEST**. (Any checks/monies submitted with this IR will be returned to the sender and may result in a delay in the application process.)

5. Attach evidence of Site Exclusivity as specified in Rule 21 Section E.2.d as applicable, and name(s), address(es) and contact information of site owner(s).

6. This Interconnection Request shall be submitted digitally with attachments by email to:

www.gen@pge.com

or by mail to:
Generator Interconnection Services
Pacific Gas and Electric Company
P.O. Box 770000
San Francisco, CA 94177

Overnight address: 245 Market Street Mail Code N7L San Francisco, CA 94105

7 Representative of Applicant to contact:

[To be completed by Applicant]
Name:
Title:
Company Name:
Street Address:
City, State:
Zip Code:
Phone Number:
Fax Number:
Email Address:

8. If the Applicant also requires new Distribution Service, the Distribution Provider will coordinate these efforts with this application. The Applicant must also complete a PG&E Application for Service. Additional fees may be required if a service or line extension is required (in accordance with PG&E Electric Rules 15 and 16). Please contact PG&E's Building and Renovation Services Center (BRSC): 1-800-743-7782 to initiate the application for the new Distribution Service. Additional information will be required in conjunction with an application for new Distribution Service.

9. Applicant should be aware that if Applicant has not yet received Rule 21 Screen Q results from PG&E by March 15 following submittal of this IR, Applicant will need to submit an Interconnection Request under PG&E's FERC Wholesale Distribution Tariff (WDT) by the close of the CAISO cluster application window(refer to http://www.caiso.com/docs/2002/06/11/2002061110300427214.html for the exact date) in order to participate in the Transmission Cluster Study for the year. An application under WDT will not impact the results of this Rule 21 study.

10. This Interconnection Request is submitted by:

Legal name of Applicant: _____

By (signature): _____

Name (type or print): _____

Title: _____

Date: _____

Attachment A to PG&E Rule 21 Exporting Generator Interconnection Request

GENERATING FACILITY DATA

Each Applicant will complete Sections 1 and 2 of this Attachment A.
Each Applicant will complete the applicable data in Sections 3 through 6 of this Attachment A based on the type of generating facility(ies) requesting interconnection. (Section 3 for synchronous generators, Section 4 for induction generators, Section 5 for wind turbine generators, and Section 6 for inverter-based generators).
Each Applicant will complete Sections 7 through 10, as applicable.
At any time, Distribution Provider may require Applicant to provide additional technical data, or additional documentation supporting the technical data provided, as deemed necessary by the Distribution Provider to perform Interconnection Studies, other studies, or evaluations as set forth under Rule 21.

1. Provide electronic copies of the following:

A. Site drawing to scale, showing generator location and Point of Interconnection with the Distribution Provider's Distribution System.
B. Single-line diagram showing applicable equipment such as generating units, step-up transformers, auxiliary transformers, switches/disconnects of the proposed interconnection, including the required protection devices and circuit breakers. For wind and photovoltaic generator projects, the one line diagram should include the distribution lines connecting the various groups of generating units, the generator capacitor banks, the step up transformers, the distribution lines, and the substation transformers and capacitor banks at the Point of Interconnection with the Distribution Provider's Distribution System. This one-line drawing must be signed and stamped by a licensed Professional Engineer if the Generating Facility is larger than 50 kW.
C. AC and DC schematics if available. Required for detailed study process.
D. Description of operations.

Note: Electronic processing is preferred, however, if submitting via U.S. mail, provide one original print of items in A through D, above.

2. Generating Facility General Information:

A. Total Generating Facility rated output (MW): _____
B. Generating Facility auxiliary Load (MW): _____
C. Project net capacity (MW): _____
D. Standby Load when Generating Facility is off-line (MW): _____
E. Number of Generating Units: _____
(Please repeat the following items for each generator)
F. Individual generator rated output (MW for each unit): _____
G. Type (induction, synchronous, D.C. with inverter): _____
H. Phase (3 phase or single phase): _____

3. Synchronous Generator –Information:

3A Generator Information:
(Please repeat the following for each generator)

A. Manufacturer: _____
B. Year Manufactured:_____
C. Rated Generator speed (rpm):_____
D. Rated MVA: _____
E. Rated Terminal Voltage (kV): _____
F. Rated Generator Power Factor Range: _____
G. Generator Efficiency at Rated Load (%): _____
H. Moment of Inertia (including prime mover): _____
I. Inertia Time Constant (on machine base) H: _____ sec or MJ/MVA
J. SCR (Short-Circuit Ratio - the ratio of the field current required for rated open-circuit voltage to the field current required for rated short-circuit current): _____
K. Please attach generator reactive capability curves.
L. Rated Hydrogen Cooling Pressure in psig (Steam Units only):
_____
M. Please attach a plot of generator terminal voltage versus field current that shows the air gap line, the open-circuit saturation curve, and the saturation curve at full load and rated power factor.

3B Excitation System Information:
(Please repeat the following for each generator)

A. Indicate the Manufacturer _____ and Type _____of excitation system used for the generator. For exciter type, please choose from 1 to 9 below or describe the specific excitation system.
(1) Rotating DC commutator exciter with continuously acting regulator. The regulator power source is independent of the generator terminal voltage and current.
(2) Rotating DC commentator exciter with continuously acting regulator. The regulator power source is bus fed from the generator terminal voltage.
(3) Rotating DC commutator exciter with non-continuously acting regulator (i.e., regulator adjustments are made in discrete increments).
(4) Rotating AC Alternator Exciter with non-controlled (diode) rectifiers. The regulator power source is independent of the

generator terminal voltage and current (not bus-fed).

(5) Rotating AC Alternator Exciter with controlled (thyristor) rectifiers. The regulator power source is fed from the exciter output voltage.

(6) Rotating AC Alternator Exciter with controlled (thyristor) rectifiers.

(7) Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from the generator terminal voltage.

(8) Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from a combination of generator terminal voltage and current (compound-source controlled rectifiers system.

(9) Other (specify): _____

B. Attach a copy of the block diagram of the excitation system from its instruction manual. The diagram should show the input, output, and all feedback loops of the excitation system.

C. Excitation system response ratio (ASA): _____

D. Full load rated exciter output voltage: _____

E. Maximum exciter output voltage (ceiling voltage): _____

F. Other comments regarding the excitation system? _____
_____

3C Turbine-Governor Information:
(Please repeat the following for each generator)

Please complete Part A for steam, gas or combined-cycle turbines, Part B for hydro turbines, and Part C for both.

A. Steam, gas or combined-cycle turbines:

(1) List type of unit (Steam, Gas, or Combined-cycle):_____

(2) If steam or combined-cycle, does the turbine system have a reheat process (i.e., both high and low pressure turbines)? _____

(3) If steam with reheat process, or if combined-cycle, indicate in the space provided, the percent of full load power produced by each turbine:

Low pressure turbine or gas turbine:_____%

High pressure turbine or steam turbine:_____%

(4) For combined cycle plants, specify the plant net output capacity (MW) for an outage of the steam turbine or an outage of a single combustion turbine:_____

B. Hydro turbines:

(1) Turbine efficiency at rated load: _____%

(2) Length of penstock: _____ft
(3) Average cross-sectional area of the penstock: _____ft2
(4) Typical maximum head (vertical distance from the bottom of the penstock, at the gate, to the water level): _____ft
(5) Is the water supply run-of-the-river or reservoir: _____
(6) Water flow rate at the typical maximum head: _____ft^3/sec
(7) Average energy rate: _____kW-hrs/acre-ft
(8) Estimated yearly energy production: _____kW-hrs

C. Complete this section for each machine, independent of the turbine type.

(1) Turbine manufacturer: _____
(2) Maximum turbine power output: _____MW
(3) Minimum turbine power output (while on line): _____MW
(4) Governor information:
(a) Droop setting (speed regulation): _____
(b) Is the governor mechanical-hydraulic or electro-hydraulic (Electro-hydraulic governors have an electronic speed sensor and transducer.)? _____
(c) Other comments regarding the turbine governor system?
_____
_____
_____
_____

3D Short Circuit Duty Information:
For each generator, provide the following reactances expressed in p.u. on the generator base:

- Xd – Direct Axis Synchronous Reactance: _____ p.u.
- X'd – Direct Axis Transient Reactance: _____ p.u.
- X"d – Direct Axis Subtransient Reactance: _____ p.u.
- X2 – Negative Sequence Reactance: _____ p.u.
- X0 – Zero Sequence Reactance: _____ p.u.

Generator Grounding (select one for each model):

A. _____ Solidly grounded
B. _____ Grounded through an impedance
(Impedance value in p.u. on generator base. R:_____p.u. X:_____p.u.)
C. _____ Ungrounded

4. Induction Generator Information:
(Please repeat the following for each generator)

A. Motoring Power (kW): _____
B. I_2^2t or K (Heating Time Constant): _____
C. Rotor Resistance, Rr: _____
D. Stator Resistance, Rs: _____
E. Stator Reactance, Xs: _____
F. Rotor Reactance, Xr: _____
G. Magnetizing Reactance, Xm: _____
H. Short Circuit Reactance, Xd": _____
I. Exciting Current: _____
J. Temperature Rise: _____
K. Frame Size: _____
L. Design Letter: _____
M. Reactive Power Required In Vars (No Load): _____
N. Reactive Power Required In Vars (Full Load): _____
O. Total Rotating Inertia, H: _____ Per Unit on kVA Base

5. Wind Turbine Generator (WTG) Information:

(Proposed projects may include one or more WTG types. Please repeat the following for each type of WTG).

A. WTG Manufacturer and Model: _____
B. Number of WTGs: _____
C. WTG Type (check one):
_____ Type 1 (Squirrel-cage induction generator)
_____ Type 2 (Wound rotor induction machine with variable rotor resistance)
_____ Type 3 (Doubly-fed asynchronous generator)
_____ Type 4 (Full converter interface)
D. Nameplate Rating (each WTG): _____/_____ kW/kVA
E. Rated Terminal Voltage: _____ kV
F. For Type 1 or Type 2 WTGs:
(1) uncompensated power factor at full load: _____
(2) power factor correction capacitors at full load: _____MVAR
(3) number of shunt stages and size: _____
(4) Please attach capability curve describing reactive power or power factor range from no output to full rated output, including the effect of shunt compensation
G. For Type 3 or Type 4 WTGs:
(1) Maximum under-excited power factor at full load: _____
(2) Maximum over-excited power factor at full load: _____
(3) Control mode: _____ (voltage control, fixed power factor)
(4) Please attach capability curve describing reactive power or power factor range from no output to full rated output
H. Short Circuit Characteristics: Applicant to provide technical data related to the short circuit characteristics of proposed WTGs for short circuit duty study

modeling purposes. For example, the applicant can provide manufacturer short circuit test data showing faulted condition for three phase and single-line-to-ground fault.

Distribution Provider may require testing verification of voltage and harmonic performance during commissioning test of WTG based generation projects.

6. Inverter Based Generation Systems Information:

Proposed inverter based generation projects may include one or more types of inverters. Please provide answers to the following for each type of inverter.

A. Inverter Manufacturer and Model: _____
B. Number of Inverters: _____
C. Nameplate Rating (AC, each inverter): _____/_____ kW
D. Nameplate Voltage Rating (AC): _____ kV
E. Maximum AC line current: _____ Amps
F. Nameplate Power Factor Rating (AC): _____
G. Please attach capability curve describing reactive power or power factor range from no output to full rated output
H. Inverter control mode (e.g. voltage, power factor, reactive power): _____
I. Short Circuit Characteristics: Applicant to provide technical data related to the short circuit characteristics of proposed inverter based generation systems. For example, the applicant can provide a sinusoidal waveform test data showing faulted condition at the AC side of the inverter for a three phase and single-line-to-ground fault.
J. Harmonics Characteristics:
   (1) Inverter switching frequency: _____
   (2) Harmonic characteristics for each unit up to switching frequency: _____
   (3) Harmonic characteristics for aggregate generation facility: _____
K. Inverter disconnection characteristics: Applicant to provide voltage sinusoidal waveform test data which shows the voltage characteristics during disconnection of inverter system from distribution system at 100% and at 50% of rated output.

Distribution Provider may require testing verification of voltage and harmonic performance during commissioning test of the inverter based generation systems.

7. Step-Up Transformer Data:

For each step-up transformer (e.g. main step-up transformers, padmount transformers), fill out the data form provided in Table 1.

8. Plant-Level Reactive Power Compensation Data:
Provide the following information for plant-level reactive power compensation, if applicable:

A. Number of individual shunt capacitor banks: _____
B. Individual shunt capacitor bank rated voltage (kV): _____
C. Individual shunt capacitor bank size (kVAR at rated voltage): _____
D. Planned dynamic reactive control devices (SVC, STATCOM): _____
E. Control range: _____ kVAR (lead) _____ kVAR (lag)
F. Control mode (e.g. voltage, power factor, reactive power): _____
G. Please provide the overall plant reactive power control strategy

9. Load Flow and Dynamic Models:
Only provide data in this section when requested by the Distribution Provider.

The WECC Data Preparation Manual for Power Flow Base Cases and Dynamic Stability Data has established power flow and dynamic modeling requirements for generation projects in WECC base cases. In general, if the aggregate sum of generation on a bus exceeds 10 MVA, it should not be netted. Furthermore, the total netted generation in an area should not exceed five percent of the area's total generation. Based on current WECC modeling requirements, the following information will be required for all generation projects whose net capacity is greater than 10 MVA. The following information may also be required for generation projects less than 10 MVA on a case-by-case basis, based on the amount of generation in the area of the requested Point of Interconnection.

A. Provide load flow model for the generating plant and its interconnection facilities in GE PSLF *.epc format, including new buses, generators, transformers, interconnection facilities. An equivalent model is required for the plant with generation collector systems. This data should reflect the technical data provided in this Attachment A.

B. For each generator, governor, exciter, power system stabilizer, WTG, or inverter based generator, select the appropriate dynamic models from the General Electric PSLF Program Manual and provide the required input data. Include any user written *.p EPCL files to simulate inverter based plants' dynamic responses (typically needed for inverter based PV/wind plants). Provide a completed *.dyd file that contains the information specified in this section.

The GE PSLF manual is available upon request from GE. There are links within the GE PSLF User's Manual to detailed descriptions of specific models, a definition of each parameter, a list of the output channels, explanatory notes, and a control system block diagram. In addition, GE PSLF modeling information and various modeling guidelines

documents have been prepared by the WECC Modeling and Validation Work Group. This information is available on the WECC website (www.wecc.biz).

If you require assistance in developing the models, we suggest you contact General Electric. Accurate models are important to obtain accurate study results. Costs associated with any changes in facility requirements that are due to differences between model data provided by the generation developer and the actual generator test data, may be the responsibility of the generation developer.

TABLE 1

TRANSFORMER DATA
(Provide for each level of transformation)

UNIT_____

NUMBER OF TRANSFORMERS_____ PHASE _____

RATING	H Winding	X Winding	Y Winding
Rated MVA	_____	_____	_____
Connection (Delta, Wye, Gnd.)	_____	_____	_____
Cooling Type (OA,OA/FA, etc) :	_____	_____	_____
Temperature Rise Rating	_____	_____	_____
Rated Voltage	_____	_____	_____
BIL	_____	_____	_____
Available Taps (% of rating)	_____	_____	_____
Load Tap Changer? (Y or N)	_____	_____	_____
Tap Settings	_____	_____	_____
IMPEDANCE	H-X	H-Y	X-Y
Percent	_____	_____	_____
MVA Base	_____	_____	_____
Tested Taps	_____	_____	_____
WINDING RESISTANCE	H	X	Y
Ohms	_____	_____	_____

CURRENT TRANSFORMER RATIOS

H_____ X_____ Y_____ N_____

PERCENT EXCITING CURRENT 100 % Voltage; _____ 110% Voltage_____

Supply copy of nameplate and manufacturer's test report when available.

ATTACHMENT B

PG&E Revised Rule 21 Transition Plan Interim Letter Agreement

Date:

[INSERT NAME AND ADDRESS OF RULE 21 ELIGIBLE WHOLESALE APPLICANT]

Re: Application for Interconnection` Under Revised Rule 21

Dear [INSERT NAME]:

Currently pending before the California Public Utilities Commission (CPUC) is a Motion for Approval of a Settlement Agreement that includes a Revised Electric Rule 21 Tariff and associated forms and agreements (Revised Rule 21). This *Motion for Approval of Settlement Agreement Revising Distribution Level Interconnection Rules and Regulations* was filed in Rulemaking (R.) 11-09-011 on March 16, 2012 ("Settlement Motion"). The Revised Rule 21 provides an updated and improved process for CPUC jurisdictional interconnections of exporting generating facilities that participate in certain wholesale sales arrangements, such as the AB 1613 feed in tariff, eligible for interconnection under Rule 21.

In order to take advantage of the improved process in the Revised Rule 21 while the CPUC considers approval of the Settlement Motion, [INSERT NAME] and Pacific Gas and Electric Company (PG&E) (together "the Parties") agree to proceed under portions of the pending Revised Rule 21 as outlined in PG&E's April 23, 2012 *Motion to Adopt a Rule 21 Transition Plan* (PG&E Transition Plan). The Parties enter into this agreement on an interim basis pursuant to PG&E's existing Electric Tariff Rule 21 Section d.1.h. In the event the CPUC modifies the Revised Rule 21 as part of its approval process, the Parties agree to make any required changes needed to conform to the CPUC approved version as soon as practicable. In addition, both Parties agree that this agreement shall at all times be subject to such changes or modifications by the CPUC as the CPUC may, from time to time, direct in the exercise of its jurisdiction.

In consideration of the Parties' mutual desire to proceed under portions of the Revised Rule 21 as outlined in the PG&E Transition Plan, the Parties enter in to this Revised Rule 21 Interim Letter Agreement effective upon execution by both Parties below.

_____	_____
[INSERT NAME]	Pacific Gas and Electric Company
_____	_____
Date	Date

(END OF ATTACHMENT B)

ATTACHMENT C

DRAFT

FILED
04-23-12
04:59 PM

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE

STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's own motion to improve distribution level interconnection rules and regulations for certain classes or electric generators and electric storage resources.	))))))	Rulemaking 11-09-011 (Filed September 22, 2011)

SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) MOTION TO ADOPT TRANSITION PLAN

DOUGLAS K. PORTER
TRISTAN REYES CLOSE
MATTHEW DWYER

Attorneys for
SOUTHERN CALIFORNIA EDISON COMPANY

2244 Walnut Grove Avenue
Post Office Box 800
Rosemead, California 91770
Telephone: (626) 302-6521
Facsimile: (626) 302-6795
E-mail: matthew.dwyer@sce.com

Dated: **April 23, 2012**

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE

STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's own motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources.	))))))	Rulemaking 11-09-011 (Filed September 22, 2011)

SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) MOTION TO ADOPT TRANSITION PLAN

Pursuant to Rule 11.1 of the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission" or "CPUC"), Southern California Edison Company ("SCE") respectfully submits this *Motion to Adopt Transition Plan* ("Motion") and requests that the Commission approve the attached transition plan.

I. BACKGROUND

In August 2011, the Commission initiated a settlement process on CPUC-jurisdictional distribution-level interconnection issues and encouraged all parties interested in interconnection issues to participate in the settlement discussions. The interested parties ("Settlement Parties") began confidential settlement negotiations on August 23, 2011. On September 22, 2011, the Commission issued an Order Instituting Rulemaking on the Commission's own motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources, R.11-09-011 ("OIR"). The OIR sought to "address the key policy and technical issues essential to timely, non-discriminatory, cost-

effective and transparent interconnection."[1] It was also contemplated that the OIR might be used by the Commission as the procedural forum for the distribution-level interconnection settlement efforts.[2]

With guidance from Commission Staff, Settlement Parties engaged in frequent and lengthy meetings for seven months. The Settlement Parties reached a settlement in March 2012, and submitted a Settlement Agreement to the Commission for approval on March 16, 2012. The Settlement Agreement encompasses nearly all issues identified in the OIR by either capturing them via revisions to the existing Rule 21 Tariff ("Revised Rule 21") or recommending they be addressed in a second phase of the OIR proceeding.

On March 2, 2012, The Vote Solar Initiative ("Vote Solar") submitted a *Motion to Adopt Interim Procedure*. That motion sought Commission approval to permit certain "interim" issues to move forward while the Commission evaluates the Settlement Agreement, including the development of a transition plan that will explain how the Revised Rule 21 will be applied to existing Rule 21 Applicants.[3] On April 20, 2012, Administrative Law Judge Regina DeAngelis issued a ruling granting the motion of Vote Solar, and ordering each utility to file its transition plan by April 23, 2012. Pursuant to the instant *Motion to Adopt Transition Plan*, SCE submits the attached Transition Plan[4] for Commission review and approval.

II. TRANSITION PLAN

The proposed Transition Plan, set forth in Attachment 1 to this Motion, is summarized below. The Transition Plan is intended to explain how the Revised Rule 21 Tariff will be applied to Applicants already in SCE's interconnection queue and in various stages of the interconnection process.

Section II.A of this Motion explains when SCE will start to apply the Revised Rule 21. Section II.B addresses limited exceptions to the application of the Revised Rule 21 for certain Applicants. Specifically, Section II.B.1 outlines an exception for Applicants whose projects are in transmission-interdependent areas

---

1 OIR at 4.

2 *Id.* at 2.

3 Existing Rule 21 Applicants are those Applicants who have a submitted an Interconnection Request prior to the effective date of the Revised Rule 21 tariff.

4 Capitalized terms not defined in this Motion have the meaning set forth in the Revised Rule 21.

and have a queue date[5] on or before March 16, 2012. Section II.B.2 outlines particular aspects of the study results that Applicants eligible for this exception will receive. Section II.C clarifies the implications of the proposed Transition Plan for Applicants that have projects in transmission-interdependent areas that have a queue date after March 16, 2012.

A. SCE Will Begin Applying the Revised Rule 21 on the Date it is Effective

SCE proposes that the Revised Rule 21 apply to each Applicant on the date the revised rule is deemed effective by the Commission ("Effective Date"), except as described below in Section II.B. For applicants who started the Rule 21 process prior to the Effective Date, SCE will apply the Revised Rule 21 to all steps in the interconnection process as outlined in the Transition Plan.

There is one change in the Revised Rule 21 review process that should be highlighted for certain Applicants with PUC section 2827 Generating Facilities that include non-inverter based Generators and/or Generators with non-Certified Equipment. These Applicants should submit a completed Net Energy Metering Interconnection Request including all supporting documents sufficient for the Distribution Provider, i.e., SCE, to start the review process without waiting for the final inspection clearance. Applicants with such Generating Facilities should submit their Interconnection Request at least six (6) months in advance of their planned Commercial Operation Date. The advance submission of the Interconnection Request will better accommodate the SCE's review and studies in a manner consistent with the timelines established in the Revised Rule 21 that may be required to complete the processing for interconnection of non-inverter based Generators and/or Generators with non-Certified Equipment.

B. Exceptions That Will Be Applied To Certain SCE Applicants in Transmission-Interdependent Areas

In order to facilitate a smooth transition from the current Rule 21 to the Revised Rule 21, SCE proposes certain limited exceptions that would allow Applicants to continue to be studied under a serial

---

[5] The term "queue date," as used in this Motion, is a reference to the date assigned to an Applicant's project by SCE which reflects the position of that Applicant's interconnection request relative to other interconnection requests.

study process even though they would have been placed in the cluster study process under the Revised Rule 21, thereby maintaining their current queue positions after the Effective Date. By implementing these exceptions for Applicants, SCE is anticipating and trying to accommodate the needs and concerns of its customers. For example, Silverado Power stressed the importance of maintaining the queue position of already-queued generators in its response to the *Motion of The Vote Solar Initiative to Adopt an Interim Procedure* stating, "Silverado Power believes that the Commission should address the development of a policy to transition customers queued under the current Rule 21 Tariff to an adopted, revised Rule 21 Tariff in such a way that allows already-queued projects to maintain their queue positions."[6] The exceptions, explained in Section II.B.1, are intended to address such concerns. A flowchart summarizing how the exception is applied is in Attachment 2.

1. Applicants in Transmission-Interdependent Areas With Queue Dates On or Prior to March 16, 2012 Will Be Studied Serially Subject to Revised Timelines

SCE believes that there should be a distinction between those Applicants whose assigned queue date is on or before March 16, 2012 (the date of the filing of the Revised Rule 21) and those Applicants whose assigned queue date is after March 16, 2012. Most importantly, SCE proposes that Applicants with projects that are in transmission-interdependent areas and have a queue date on or before March 16, 2012 should continue to be studied in a serial process. The complete proposal is discussed below.

SCE has roughly 400 Rule 21 Applicants that proposed to locate generation in transmission-interdependent areas and have a queue date on or before March 16, 2012. These Applicants are in various stages of the interconnection process, *e.g.*, have not executed study agreements, have studies that are in process, have completed interconnection studies, etc.

---

[6] *Silverado Power Response to Motion of The Vote Solar Initiative to Adopt an Interim Procedure* at 3.

SCE proposes to require Applicants who have received study agreements, but have not yet signed such study agreements, to execute a study agreement and provide the required deposit according to the timelines of the Revised Rule 21. If the Applicant is unwilling or unable to move forward with an interconnection study under the Revised Rule 21 process, the Applicant will be subject to withdrawal under the terms of the Revised Rule 21. If the Applicant executes the study agreement under the Revised Rule 21, or has already signed one under the current Rule 21, SCE will perform and process the interconnection studies in a manner identical to the Independent Study Process ("ISP") detailed in the Revised Rule 21, *i.e.*, a serial process, regardless of whether their projects would have otherwise been deemed eligible for the ISP.

Due to the number and expected complexity of these interconnection studies, SCE does not believe it can complete the required serial studies in the 90 day timeline prescribed by the ISP. The timing of the studies to be performed will vary based on the queue date of the Applicant. SCE will endeavor to have an SIS completed by November 30, 2012 for Applicants that qualify under Section II.B.1 and have a queue date no later than the WDAT Queue Cluster 4 (March 31, 2011) that have yet to receive a System Impact Study ("SIS"). SCE will endeavor to have a SIS completed by February 28, 2013 for Applicants that qualify under Section II.B.1, have a queue date after March 31, 2011, and have yet to receive a SIS. The deadlines will only apply to Applicants who have signed study agreements by July 31, 2012. SCE will complete the Facilities Study in the timeframes set forth in the Revised Rule 21 for Applicants that qualify under Section II.B.1, have received the SIS, and wish to continue to a Facilities Study or are required to have a Facilities Study, until the number of Facilities Studies requested totals 75. At that point, due to the volume of studies required, SCE will endeavor to complete any Facilities Study requested in twice the number of days prescribed in the Revised Rule 21 until the number of Facilities Studies requested totals 150. At that point, due to the volume of studies required, SCE will endeavor any Facilities Study requested in three times the number of days prescribed in the Revised Rule 21.

Once studies are complete, if an Applicant wishes to continue to a Generator Interconnection Agreement, SCE will provide one in the number of days prescribed in the Revised Rule 21 until the number of Generator Interconnection Agreements requested reaches 75. At that point, due to the volume of Generator Interconnection Agreements required, SCE will provide a Generator Interconnection Agreement

to an Applicant in twice the number of days prescribed in the Revised Rule 21 until the number of requests reaches 150. At that point, SCE will provide a Generator Interconnection Agreements to an Applicant in three times the number of days prescribed in the Revised Rule 21.

2. Expectations for Study Results of Applicants That Are Studied in a Serial Study Process

All Applicants with projects that are in transmission-interdependent areas are in a complex situation because they are requesting interconnection in areas where there is already excess generation (either existing generation or earlier-queued generation). Due to this excess generation, they will be unlikely to be able to serve local load and transmission upgrades may be required. Moreover, because of the nature of the serial study process, SCE is not currently able to specify for the Applicants affected: (1) what upgrades will ultimately be required; (2) whether those upgrades will be paid for by an earlier-queued Applicant; and (3) the exact time frame when interconnection will occur. SCE's inability to provide specific results is caused by the volume of earlier-queued megawatts and by the uncertainty about whether each of those generators will interconnect as planned or will withdraw from the queue. For example, SCE currently has over 900 active interconnection requests, representing 30,000 MWs of capacity inclusive of interconnection requests under the California Independent System Operator ("CAISO"), Wholesale Distribution Access Tariff ("WDAT"), and Rule 21 procedures. A further complication is that transmission upgrades are often complex and take a long time to plan, site, permit and construct (estimated to require 6 – 8 years). In light of this uncertainty, SCE will provide study results which provide the best information available at the time and will include a range of cost estimates. The range of cost estimates will identify the upgrades triggered by the Applicant, assuming all earlier-queued generators interconnect and fund the upgrades they triggered. The range of cost estimates will also identify the facilities that are required by studies of earlier-queued generators that, if not funded by the earlier-queued generators, may still be required for interconnection, and would thus become the cost responsibility of the Applicant ("Other Potential Facilities").[7] This proposal is

[7] Upon changes to the queue (*e.g.*, withdrawal of an earlier-queued generator), a technical evaluation would be performed to determine if a portion of or all of the Other Potential Facilities would still be required to interconnect a particular Applicant.

designed to address the uncertainty surrounding cost responsibility by providing the range of possible outcomes.

An additional component that adds further complexity is the proposed commercial operation date ("COD") for each generator. There is no necessary relationship between the queue order of generators and the proposed CODs. It is not unusual for an Applicant to have a proposed COD prior to an earlier-queued generator's COD. Consequently, an Applicant who is waiting for an earlier-queued generator to fund particular upgrades may not achieve its desired COD. In order to accommodate such Applicants, SCE will perform an operational study if requested,[8] and if the project is located in an area that is not an area with known, current existing transmission constraints, that would not allow for early interconnection. This operational study will inform the Applicant of whether there is a feasible means of interconnecting their project in advance of upgrades triggered by earlier-queued projects. If not, the operational study will show the Applicant what earlier-queued upgrades do need to be built in order to meet its desired COD. The operational study will also provide estimates of the cost and timing for such upgrades. If the Applicant is willing to initially fund such upgrades in order to satisfy its planned COD, provisions will be made in the Generator Interconnection Agreement such that if the earlier-queued Applicant who triggered the needed upgrades proceeds with interconnection, the earlier-queued Applicant will be required to reimburse the later-queued Applicant for the cost of the upgrade that was advanced by the earlier-queued Applicant. It should be noted that some Applicants will not be able to interconnect (without requiring upgrades) under an operational study because of current transmission constraints in the area they have chosen to locate. In addition, there are some generators that have previously completed studies, but have not signed a generator interconnection agreement and may benefit from having an updated study. When such conditions exist, SCE will contact the Applicant to arrange for a re-evaluation under the terms described above.

After presenting these options to the Applicant, if an Applicant determines to continue with a particular Interconnection Request, the applicant will be required to post Financial Security and execute a

---

[8] The operational study will be conducted at the Applicant's expense with an estimated completion date provided by SCE at the time the study is requested.

Generator Interconnection Agreement as required by the Revised Rule 21. It is important that nonviable projects withdraw from the queue so that viable projects can obtain accurate information about their prospects for interconnection. If an Applicant determines that the length of time required for interconnection is not consistent with their business model, the Applicant should withdraw from the queue. SCE believes this process and requirements will ensure that only viable projects remain in the queue while providing the most flexibility to Applicants given the reality of its existing queue and the capacity of its system.

C. Applicants In Transmission-Interdependent Areas Who Have A Queue Date After March 16, 2012 Will Be Subject To The Cluster Process Under The Revised Rule 21

Under the Revised Rule 21, SCE will study Applicants with projects that are in transmission-interdependent areas, and have a queue date after March 16, 2012, in a cluster study process with other generators interconnecting in the same area, pursuant to the WDAT Queue Cluster Process. SCE chose the March 16, 2012 date because it is the date that the Settlement Agreement was filed and the terms of the Revised Rule 21 were made available to the public. The Settling Parties were well aware of the need to study transmission interdependent projects together in a cluster study when they approved of the use of the transmission cluster process in the Revised Rule 21. Thus, while SCE provided an exception to the cluster process for a very large number of generators, it needed to draw a line. This is particularly necessary given that many generator projects are not suited for the serial process, making it more difficult to provide timely and accurate results to all participants. SCE tried to tailor its exceptions to minimize the impact of the transition on already-queued Applicants where possible. A timeline of the Rule 21 reform efforts and the demarcation line between clustered and serial projects can be found in Attachment 3.

III. ADDITIONAL ISSUES RELATING TO APPLICANTS

A. Queue Posting

The Revised Rule 21 requires SCE to post a queue listing of all Rule 21 Interconnection Requests (except net energy metering interconnection requests) and allows SCE to post a combined queue listing

containing both Rule 21 and FERC-jurisdictional Interconnection Requests to the distribution system. The information that will be posted can be found by viewing SCE's FERC-jurisdictional WDAT queue. The queue is posted on SCE's website.[9] SCE will begin posting the Rule 21 queue at the next regularly scheduled update (such updates occur monthly) after the Effective Date.

IV. CONCLUSION

For the foregoing reasons, SCE respectfully requests the Commission approve this Motion and the attached Transition Plan.

Respectfully submitted,

DOUGLAS K. PORTER
TRISTAN REYES CLOSE
MATTHEW DWYER

/s/ Matthew Dwyer
By: Matthew Dwyer

Attorneys for
SOUTHERN CALIFORNIA EDISON COMPANY

2244 Walnut Grove Avenue
Post Office Box 800
Rosemead, California 91770
Telephone: (626) 302-6521
Facsimile: (626) 302-6795
E-mail:matthew.dwyer@sce.com

April 23, 2012

[9] This information can be found at: http://www.sce.com/nrc/aboutsce/regulatory/openaccess/wdat/wdat_queue.xls

Attachment 1

ATTACHMENT 1

PROCEDURES FOR TRANSITIONING INTERCONNECTION REQUESTS SUBMITTED PRIOR TO EFFECTIVE DATE OF THE REVISED RULE 21 TARIFF

I. Objective

A. The objective of this Transition Plan is to set forth procedures for the transition of existing Rule 21 Interconnection Requests to the Revised Rule 21.

II. Definitions

A. Capitalized terms shall have the meaning set forth in the Revised Rule 21 or in the Motion.

III. Transition of Interconnection Requests of Existing Rule 21 Applicants

A. General

i. For Applicants who submitted an Interconnection Request under Rule 21 prior to the Revised Rule 21 Effective Date, the Revised Rule 21 shall be applied to Applicant's interconnection process as outlined in this Transition Plan.

ii. Withdrawals occurring before the Effective Date will be processed in accordance with the existing Rule 21. Withdrawals occurring on or after the Effective Date will be processed in accordance with the Revised Rule 21. Accordingly, on or after the Effective Date, refunds of the application fee will not be provided.

iii. The tariff sections referred to here are for convenience and do not imply that other applicable provisions of the Revised Rule 21 do not apply.

iv. Section references refer to the Revised Rule 21 unless otherwise noted.

B. Applicants Who Have Not Yet Received A Queue Date

i. Interconnection Requests that have been submitted, but have not received a queue date on or before the Effective Date will be processed in accordance with the timelines in Section E.5 of the Revised Rule 21, but will not be required to submit a new Interconnection Request. Interconnection Requests will be deemed complete based on the requirements of the existing Rule 21.

C. Applicants In The Initial Or Supplmental Review Process

i. Interconnection Requests that have a queue date on or before the Effective Date and are being evaluated under Initial or Supplemental Review, but have not completed the evaluation by the Effective Date will be processed in accordance with Section F.2 of the Revised Rule 21 using the Revised Rule 21 Fast Track evaluation, provided the Revised Rule 21 eligibility requirements are met.[10] If the eligibility requirements are not met, the Applicant will be processed in accordance with Section E or F of this Transition Plan, as applicable.

D. Applicants That Have Passed Initial Or Supplemental Review

i. Interconnection Requests that have passed Initial or Supplemental Review, but have not signed a Generator Interconnection Agreement by the Effective Date will be processed in accordance with Section F.2.e of the Revised Rule 21.

1. Applicants who have previously been provided a draft or executable interconnection agreement or an Interconnection Facilities Financing and Ownership Agreement, but have not yet executed the agreement, may elect to finalize and execute the agreement they were provided or request one of the new Generation Interconnection Agreements approved in connection with the Revised Rule 21, provided the Applicant is eligible for such Generation Interconnection Agreement.

E. Applicants That Have Failed Supplemental Review and Have A Queue Date No Later Than March 16, 2012

i. Projects with a queue date no later than March 16, 2012, will be studied under the Independent Study Process in accordance with Section F.3.d of the Revised Rule 21as follows:

1. Applicants that failed Supplemental Review but did not have their scoping meeting by the Effective Date will be processed in accordance with Section F.3.d.i of the Revised Rule 21.

2. Applicants that had their scoping meeting but were not tendered a study agreement prior to the Effective Date will be provided the Standardized Study Agreement in

---

[10] See Section E.2.b of the Revised Rule 21for eligibility requirements.

accordance with the timelines set forth in the Revised Rule 21.[11]

3. Applicants that have been tendered a study agreement, but have not executed it, will be required to execute the study agreement within the timelines set forth in the Revised Rule 21. To avoid duplication of work, new study agreements will not be issued.

4. Applicants that have started the study process, but have not completed studies, will be processed in accordance with Section F.3.d of the Revised Rule 21except that the timelines for completion of the System Impact Study are modified as follows:

a. Applicants with a queue date no later than the WDAT Queue Cluster 4 (March 31, 2011) will have a System Impact Study completed by November 30, 2012.

b. Applicants with a queue date after March 31, 2011will have a SIS completed by February 28, 2013.

c. If the Applicant requests a Facilities Study or is required to have a Facilities Study, it will be completed in the timeframes set forth in the Revised Rule 21 until the number of Facilities Studies requested reaches 75. At that point, any Facilities Study requests will be completed in twice the number of days prescribed in the Revised Rule 21 to complete Facilities Studies until the number of Facilities Studies requested reaches 150. At that point, any Facilities Study requests will be completed in three times the number of days prescribed in the Revised Rule 21.

d. If the Applicant requests a Generator Interconnection Agreement, it will be provided in the time prescribed in the Revised Rule 21 until the number of Generator Interconnection Agreements requested reaches 75. At that point, any Generator Interconnection Agreement requests will be completed in twice the number of days prescribed in the Revised Rule 21 to complete Generator Interconnection Requests until the number of Generator Interconnection Agreements requested reaches 150. At that point, any Generator Interconnection Agreement requests will be completed in three times the number of days prescribed in the Revised Rule 21.

e. These timelines apply to Applicants who have executed study agreements by July 31, 2012. Applicants who have not executed study agreements by July 31, 2012

---

[11] If the Standardized Study Agreement is not approved, the existing study agreement will be provided.

will be provided a schedule of completion dates after the study agreement is executed.

f. Applicants who are not in transmission-interdependent areas will be processed according to the timelines set forth in the Revised Rule 21.

F. Applicants That Have Failed Supplemental Review And Have A Queue Date Later Than March 16, 2012

i. If an Applicant has failed either Initial or Supplemental Review, and has not been evaluated for transmission interdependence by the Effective Date, then the Distribution Provider will provide an assessment of whether the Applicant is in a transmission-interdependent area in accordance with Screen Q within 20 Business Days of the Effective Date.

ii. Applicants that have been identified as being located in a transmission-interdependent area will be processed in accordance with Section F.3.c. of the Revised Rule 21, which requires the Applicant to withdraw from Rule 21 and allows the Applicant to apply under the WDAT for the next cluster study.

iii. Applicants that are not in a transmission-interdependent area will be processed in accordance with Section F.3.d of the Revised Rule 21 depending on their stage in the process as described in Section E.i.1 through E.i.4 of this Transition Plan, except that the timelines for study completion will be as specified in the Revised Rule 21.

G. Applicants That Have Completed Detailed Studies But Have Not Signed A Generator Interconnection Agreement

i. Applicants that have completed detailed studies but have not signed a Generator Interconnection Agreement by the Effective Date will be processed in accordance with Section F.3.e of the Revised Rule 21, except as provided below.

1. Applicants who were previously provided a draft or executable interconnection agreement or an Interconnection Facilities Financing and Ownership Agreement, but have not yet executed the agreement, may elect to finalize and execute the agreement they were provided or request one of the new Generation Interconnection Agreements approved in connection with the Revised Rule 21, provided the Applicant is eligible for such Generation Interconnection Agreement.

2. Applicants that SCE has identified as potentially benefiting from a re-evaluation, will be processed in accordance with Section F.3 of the Revised Rule 21 beginning when the re-evaluation results have been provided to the Applicant.

H. Financial Security Posting For Applicants

i. All Applicants will be required to comply with the provisions in Section F.4 of the Revised Rule 21 (for Independent Study Process) and the new Generator Interconnection Agreement (for Fast Track) regarding Financial Security posting.

ii. For projects being studied under the ISP, the initial posting of Financial Security will be due in accordance with the timelines set forth in Section F.4.b of the Revised Rule 21. If the System Impact Study was completed prior to the Effective Date, the same timeline will apply, but the start of the timeline will be as described in Section III.B of this Transition Plan. The second posting of Financial Security will be due in accordance with the timelines set forth in Section F.4.c of the Revised Rule 21. If the Facilities Study was completed prior to the Effective Date, the same timeline will apply, but the start of the timeline will be as described in Section III.B of this Transition Plan. Similar treatment will apply to the third posting of Financial Security.

IV. Timelines

A. The intent of this Section is to ensure that all timelines in the Revised Rule 21 begin to apply as of the Effective Date of the revised tariff and that notice is given to Applicants.

B. For purposes of the transition, notice of timelines that require a response from the Applicant will be provided via a written communication from the SCE project manager to the Applicant informing the Applicant of the due date.

1. Example: If an Applicant was provided a study agreement that it had not yet executed, the timeline for execution and submission of a deposit for that study agreement will begin when an email is sent advising the Applicant that the executed study agreement and study deposit are due on a certain date, regardless of how long the Applicant had the study agreement prior to the email.

C. For purposes of the transition, upon approval of the Revised Rule 21 or the Effective Date, SCE shall abide by all timelines in the Revised Rule 21 that require action on the part of SCE, except where noted in this Transition Plan.

1. Example: If an Interconnection Request was submitted prior to the Effective Date and was not reviewed by SCE, the timeline for SCE to complete its review will begin on the Effective Date, regardless of when the Applicant submitted the Interconnection Request.

Attachment 2

Flowchart Summarizing How The Exception Is Applied

ISP stands for Independent Study Process

Attachment 3

Timeline of Rule 21 Reform and Line of Demarcation Between Serial and Cluster Study Process for Transmission Interdependent Projects

(END OF ATTACHMENT C)

ATTACHMENT D

DRAFT

FILED
04-23-12
04:59 PM

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion to Improve Distribution Level Interconnection Rules and Regulations for Certain Classes of Electric Generators and Electric Storage Resources.	))))))	Rulemaking 11-09-011 (Filed September 22, 2011)

SAN DIEGO GAS & ELECTRIC COMPANY'S MOTION CONCERNING TRANSITION PLAN

James F. Walsh
Attorney for
SAN DIEGO GAS & ELECTRIC COMPANY
101 Ash Street, HQ12
San Diego, CA 92101
Phone: 619-699-5022
Fax: 619-699-5027
E-mail: jfwalsh@semprautilities.com

April 23, 2012

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion to Improve Distribution Level Interconnection Rules and Regulations for Certain Classes of Electric Generators and Electric Storage Resources.	))))))	Rulemaking 11-09-011 (Filed September 22, 2011)

SAN DIEGO GAS & ELECTRIC COMPANY'S MOTION CONCERNING TRANSITION PLAN

Pursuant to Rule 11.1 of the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission" or "CPUC") and Administrative Law Judge ("ALJ") DeAngelis's Ruling (the "Ruling"), dated April 20, 2012, San Diego Gas & Electric Company ("SDG&E"), respectfully submits this *Motion Concerning Transition Plan*.

I. BACKGROUND

In August 2011, the Commission initiated an effort to reach settlement on distribution-level interconnection issues and encouraged all parties interested in interconnection issues to participate in the settlement discussions. The interested parties ("Settlement Parties") began confidential settlement negotiations on August 23, 2011. On September 22, 2011, the Commission issued an Order Instituting Rulemaking on the Commission's own motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources, R.11-09-011 ("OIR"). The OIR sought to "address the key policy and technical issues

essential to timely, non-discriminatory, cost-effective and transparent interconnection."[1] It was also contemplated that the OIR might be used by the Commission as the procedural forum for the distribution-level interconnection settlement efforts.[2]

With guidance from Commission Staff, Settlement Parties engaged in frequent and lengthy meetings for seven months. The Settlement Parties reached a settlement in March 2012, and submitted a Settlement Agreement to the Commission for approval on March 16, 2012. The Settlement Agreement encompasses nearly all issues identified in the OIR by either capturing them via revisions to the existing Rule 21 Tariff ("Revised Rule 21") or recommending they be addressed in a second phase of the OIR proceeding.

On March 2, 2012, The Vote Solar Initiative ("Vote Solar") submitted a *Motion to Adopt an Interim Procedure*. That motion sought Commission approval to permit certain "interim" issues to move forward while the Commission evaluates the Settlement Agreement, including the development of a transition plan that will explain how the Revised Rule 21 will be applied to existing Rule 21 Applicants, if any.[3] On April 4, 2012, ALJ De Angelis issued an email ruling directing advance notification that the respondents in this proceeding are to file a motion concerning their respective transition plans by April 23, 2012. On April 20, 2012, ALJ DeAngelis confirmed her earlier email by issuing the Ruling.

II. TRANSITION PLAN

At this point, SDG&E is dealing with eleven Applicants with a total capacity of 15.8 MWs that have submitted interconnection requests to SDG&E prior to March 16,

---

[1] OIR at 4.
[2] *Id*. at 2.
[3] Existing Rule 21 Applicants are those Applicants who have a queue position prior to the effective date of the Revised Rule 21 tariff.

2012 pursuant to the existing Rule 21. All of the eleven projects are currently under initial or supplemental reviews. Four of these projects representing 6.3 MWs have signed FiT agreements and seven of these projects representing 9 MW have submitted interconnection requests only. Of these eleven projects, three projects totaling 4.8 MWs were submitted at the same time by the same Applicant. These three projects would interconnect at SDG&E's substation located in Area 30. The six additional projects totaling 8.0 MWs were also submitted at the same time by the same Applicant. These six projects would interconnect at SDG&E's substation located in Area 41.

Given that the circumstances involving the interconnection requests in Areas 30 and 41, the queue positions of the respective Applicants in each area remain unaffected by the Revised Rule 21 that places them in the cluster study process. Accordingly, SDG&E's proposed transition plan does not need to deal with these Applicants. SDG&E has discussed the application of the Revised Rule 21 utilizing a cluster study process with these affected Applicants and they have expressed agreement with this approach.

The remaining two Applicants involving two projects totaling 3 MWs have requested interconnection at SDG&E's substation located in Area 82 although each interconnects to different circuits. These two Applicants each have unique queue positions prior to March 16, 2012. These two projects would be serially studied through the Revised Rule 21 Independent Study Process subject to the revised timelines. Thus, these already-queued projects would maintain their queue positions.

The proposed transition plan, set forth in Attachment 1 to this Motion, is summarized below. This proposed plan is similar but not identical to the proposed transition plan that Southern California Edison Company is separately filing with the

Commission today. Specifically, SDG&E 's transition plan also does not include the exceptions found in SCE's transition plan at Section III.E.i.1-4 pertaining to the timelines for completion of the System Impact Study applicable to Applicants that have failed the supplemental review and have a queue date no later than March 16, 2012. SDG&E did not adopt these exceptions because SDG&E has not yet had occasion to undertaken Wholesale Distribution Open Access queue cluster studies and, further, as discussed above, SDG&E has received very few interconnection requests prior to March 16, 2012.

SDG&E's transition plan is intended to explain how the revised Rule 21 Tariff will be applied to Applicants already in the queue and in various stages of the interconnection process.

SDG&E proposes that the Revised Rule 21 should apply to each Applicant on the date the revised rule is deemed effective by the Commission ("Effective Date"). For applicants who started the Rule 21 process prior to the Effective Date, the Revised Rule 21 will be applied to all steps in the interconnection process that the Applicant has not yet completed.[4]

Under the Revised Rule 21, Applicants with projects that are in transmission-interdependent areas, and have a queue date after March 16, 2012, will be studied in a cluster study process with other generators interconnecting in the same area pursuant to the WDAT Queue Cluster Process. The March 16, 2012 date was chosen because that is the date the Settlement Agreement was filed and the terms of the Revised Rule 21 were made available to the public. The Settling Parties were well aware of the need to study

[4] *See* Attachment 1, § III.B. For example, Applicants that have a complete application under the current Rule 21, but that have not started studies will be studied under the new study framework in the Revised Rule 21. At present, SDG&E does not have any Applicants with completed studies and, thus none have entered into a Generation Interconnection Agreement.

transmission interdependent projects together in a cluster study when they approved of the use of the transmission cluster process in the Revised Rule 21.

There is one change in the Revised Rule 21 review process that should be highlighted for certain Applicants with PUC Section 2827 Generating Facilities that include non-inverter based Generators and/or Generators with non-Certified Equipment. Presently, SDG&E does not have pending any such Applicants. Nonetheless if such Applicants submit requests should plan to submit a completed Net Energy Metering Interconnection Request including all supporting documents sufficient for SDG&E to start the review process without waiting for the final inspection clearance. Applicants with such Generating Facilities are requested to submit their Interconnection Request at least six months in advance of their planned Commercial Operation Date. The advance submission of the Interconnection Request will better accommodate the Distribution Provider's review and studies in a manner consistent with the timelines established in the Revised Rule 21 that may be required to complete the processing for interconnection of non-inverter based Generators and/or Generators with non-Certified Equipment.

III. ADDITIONAL ISSUES RELATING TO EXISTING APPLICANTS

A. Queue Posting

The Revised Rule 21 requires each IOU to post a queue of all Rule 21 Interconnection Requests (except net energy metering interconnection requests) and allows the IOUs to post a combined queue containing both Rule 21 and FERC-jurisdictional Interconnection Requests to the distribution system. The categories of information posted in the queue are listed in Section E.5.d of the Revised Rule 21, and are contained in SDG&E's FERC-jurisdictional queue; these queues together with its

Rule 21 queue are today posted on SDG&E's websites and are currently updated on an as required basis.[5]

IV. CONCLUSION

For the foregoing reasons, SDG&E respectfully requests the Commission approve this Motion and the attached Transition Plan.

Respectfully submitted,

/s/ JAMES F. WALSH

James F. Walsh
Attorney for
SAN DIEGO GAS & ELECTRIC COMPANY
101 Ash Street, HQ12
San Diego, CA 92101
Phone: 619-699-5022
Fax: 619-699-5027
E-mail: jfwalsh@semprautilities.com

April 23, 2012

[5] SDG&E updates the queue promptly as IRs are submitted and deemed complete. For SDG&E this information can be found at: www.sdge.com/wdat.

ATTACHMENT 1

PROCEDURES FOR TRANSITIONING INTERCONNECTION REQUESTS SUBMITTED PRIOR TO EFFECTIVE DATE OF THE REVISED RULE 21 TARIFF

I. Objective

A. The objective of this Transition Plan is to set forth procedures for the transition of existing Rule 21 Interconnection Requests to the Revised Rule 21.

II. Definitions

A. Capitalized terms shall have the meaning set forth in the Revised Rule 21 or in the Motion.

III. Transition of Interconnection Requests of Existing Rule 21 Applicants

A. General

i. For Applicants who submitted an Interconnection Request under Rule 21 prior to the Revised Rule 21 Effective Date, the Revised Rule 21 shall be applied to Applicant's interconnection process as outlined in this Transition Plan.

ii. Withdrawals occurring before the Effective Date will be processed in accordance with the existing Rule 21. Withdrawals occurring on or after the Effective Date will be processed in accordance with the Revised Rule 21. Accordingly, on or after the Effective Date, refunds of the application fee will not be provided.

iii. The tariff sections referred to here are for convenience and do not imply that other applicable provisions of the Revised Rule 21 do not apply.

iv. Section references refer to the Revised Rule 21 unless otherwise noted.

B. Applicants Who Have Not Yet Received A Queue Date

i. Interconnection Requests that have been submitted, but have not received a queue date on or before the Effective Date will be processed in accordance with the timelines in Section E.5 of the Revised Rule 21, but will not be required to submit a new Interconnection Request. Interconnection Requests will be deemed complete based on the requirements of the existing Rule 21.

C. Applicants In The Initial Or Supplemental Review Process

i. Interconnection Requests that have a queue date on or before the Effective Date and are being evaluated under Initial or Supplemental Review, but have not completed the evaluation by the Effective Date will be processed in accordance with Section F.2 of the Revised Rule 21 using the Revised Rule 21 Fast Track evaluation, provided the Revised Rule 21 eligibility requirements are met.[6] If the eligibility requirements are not met, the Applicant will be processed in accordance with Section E or F of this Transition Plan, as applicable.

D. Applicants That Have Passed Initial Or Supplemental Review

i. Interconnection Requests that have passed Initial or Supplemental Review, but have not signed a Generator Interconnection Agreement by the Effective Date will be processed in accordance with Section F.2.e of the Revised Rule 21.

1. Applicants who have previously been provided a draft or executable interconnection agreement or an Interconnection Facilities Financing and Ownership Agreement, but have not yet executed the agreement, may elect to finalize and execute the agreement they were provided or request one of the new Generation Interconnection Agreements approved in connection with the Revised Rule 21, provided the Applicant is eligible for such Generation Interconnection Agreement.

E. Applicants That Have Failed Supplemental Review and Have A Queue Date No Later Than March 16, 2012

i. Projects with a queue date no later than March 16, 2012, will be studied under the Independent Study Process in accordance with Section F.3.d of the Revised Rule 21as follows:

1. Applicants that failed Supplemental Review but did not have their scoping meeting by the Effective Date will be processed in accordance with Section F.3.d.i of the Revised Rule 21.

2. Applicants that had their scoping meeting but were not tendered a study agreement prior to the Effective Date will be provided the Standardized

[6] *See* Section E.2.b of the Revised Rule 21for eligibility requirements.

Study Agreement in accordance with the timelines set forth in the Revised Rule 21.[7]

3. Applicants that have been tendered a study agreement, but have not executed it, will be required to execute the study agreement within the timelines set forth in the Revised Rule 21. To avoid duplication of work, new study agreements will not be issued.

4. Applicants that have started the study process, but have not completed studies, will be processed in accordance with Section F.3.d of the Revised Rule 21.

F. Applicants That Have Failed Supplemental Review And Have A Queue Date Later Than March 16, 2012

i. If an Applicant has failed either Initial or Supplemental Review, and has not been evaluated for transmission interdependence by the Effective Date, then the Distribution Provider will provide an assessment of whether the Applicant is in a transmission-interdependent area in accordance with Screen Q within 20 Business Days of the Effective Date.

ii. Applicants that have been identified as being located in a transmission-interdependent area will be processed in accordance with Section F.3.c. of the Revised Rule 21, which requires the Applicant to withdraw from Rule 21 and allows the Applicant to apply under the WDAT for the next cluster study.

iii. Applicants that are not in a transmission-interdependent area will be processed in accordance with Section F.3.d of the Revised Rule 21 depending on their stage in the process as described in Section E.i.1 through E.i.4 of this Transition Plan, except that the timelines for study completion will be as specified in the Revised Rule 21.

G. Applicants That Have Completed Detailed Studies But Have Not Signed A Generator Interconnection Agreement

i. Applicants that have completed detailed studies but have not signed a Generator Interconnection Agreement by the Effective Date will be processed in accordance with Section F.3.e of the Revised Rule 21, except as provided below.

---

[7] If the Standardized Study Agreement is not approved, the existing study agreement will be provided.

1. Applicants who were previously provided a draft or executable interconnection agreement, but have not yet executed the agreement or an Interconnection Facilities Financing and Ownership Agreement, may elect to finalize and execute the agreement they were provided or request one of the new Generation Interconnection Agreements approved in connection with the Revised Rule 21, provided the Applicant is eligible for such Generation Interconnection Agreement.

2. Applicants that SDG&E has identified as potentially benefiting from a re-evaluation, will be processed in accordance with Section F.3 of the Revised Rule 21 beginning when the re-evaluation results have been provided to the Applicant.

H. Financial Security Posting For Applicants

i. All Applicants will be required to comply with the provisions in Section F.4 of the Revised Rule 21 (for Independent Study Process) and the new Generator Interconnection Agreement (for Fast Track) regarding Financial Security posting.

ii. For projects being studied under the ISP, the initial posting of Financial Security will be due in accordance with the timelines set forth in Section F.4.b of the Revised Rule 21. If the System Impact Study was completed prior to the Effective Date, the same timeline will apply, but the start of the timeline will be as described in Section III.B of this Transition Plan. The second posting of Financial Security will be due in accordance with the timelines set forth in Section F.4.c of the Revised Rule 21. If the Facilities Study was completed prior to the Effective Date, the same timeline will apply, but the start of the timeline will be as described in Section III.B of this Transition Plan. Similar treatment will apply to the third posting of Financial Security.

IV. Timelines

A. The intent of this Section is to ensure that all timelines in the Revised Rule 21 begin to apply as of the Effective Date of the revised tariff and that notice is given to Applicants.

B. For purposes of the transition, notice of timelines that require a response from the Applicant will be provided via a written communication from the SDG&E project manager to the Applicant informing the Applicant of the due date.

1. Example: If an Applicant was provided a study agreement that it had not yet executed, the timeline for execution and submission of a deposit for that study agreement will begin when an email is sent advising the Applicant that the executed study agreement and study deposit are due on a certain date, regardless of how long the Applicant had the study agreement prior to the email.

C. For purposes of the transition, upon approval of the Revised Rule 21 or the Effective Date, SDG&E shall abide by all timelines in the Revised Rule 21 that require action on the part of SDG&E, except where noted in this Transition Plan.

1. Example: If an Interconnection Request was submitted prior to the Effective Date and was not reviewed by SDG&E, the timeline for SDG&E to complete its review will begin on the Effective Date, regardless of when the Applicant submitted the Interconnection Request.

(END OF ATTACHMENT D)

ATTACHMENT E

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 36865-E**
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 31574-E

Rule 21
GENERATING FACILITY INTERCONNECTIONS

A. Applicability

Applicability: This Rule describes the Interconnection, operating and Metering requirements for Generating Facilities to be connected to SCE's Distribution System over which the California Public Utilities Commission (Commission) has jurisdiction. Subject to the requirements of this Rule, SCE will allow the Interconnection of Generating Facilities with its Distribution System.

Definitions: Capitalized terms used in this Rule, and not defined in SCE's other tariffs, shall have the meaning ascribed to such terms in Section H of this Rule. The definitions set forth in Section H of this Rule shall only apply to this Rule and may not apply to SCE's other tariffs.

Consistent with IEEE 1547: This Rule has been revised to be consistent with the requirements of American National Standards Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) 1547-2003 Standards for Interconnecting Distributed Resources with Electric Power Systems. In some cases, IEEE 1547 language has been adopted directly, in others, IEEE 1547 requirements were interpreted and this Rule's language was changed to maintain the spirit of both documents. (T)

Language from IEEE 1547 that has been adopted directly (as opposed to paraphrased language or previous language that was determined to be consistent with IEEE 1547) is followed by a citation that lists the Clause from which the language derived. For example, IEEE 1547-4.1.1 is a reference to Clause 4.1.1. (N)

In the event of any conflict between this Rule and any of the standards listed herein, the requirements of this Rule shall take precedence. (N)

B. General, Rules, Rights and Obligations

1. Authorization Required to Operate: A Producer must comply with this Rule, execute an Interconnection Agreement with SCE, and receive SCE's express written permission before Parallel Operation of its Generating Facility with SCE's Distribution System. SCE shall apply this Rule in a non-discriminatory manner and shall not unreasonably withhold its permission for Parallel Operation of Producer's Generating Facility with SCE's Distribution System.

2. Separate Agreements Required for Other Services: A Producer requiring other electric services from SCE including, but not limited to, Distribution Service during periods of curtailment or interruption of the Producer's Generating Facility, must enter into agreements with SCE for such services in accordance with SCE's Commission-approved tariffs. (T)

3. Service Not Provided with Interconnection: Interconnection with SCE's Distribution System under this Rule does not provide a Producer any rights to utilize SCE's System for the transmission, distribution, or wheeling of electric power, nor does it limit those rights. (T) (T)

4. Compliance with Laws, Rules, and Tariff Schedules: A Producer shall ascertain and comply with applicable Commission-approved tariffs of SCE; applicable Federal Energy Regulatory Commission (FERC) approved rules, tariffs, and regulations; and any local, state or federal law, statute or regulation which applies to the design, siting, construction, installation, operation, or any other aspect of the Producer's Generating Facility and Interconnection Facilities.

(Continued)

(Continued)

B. General, Rules, Rights and Obligations (Continued)

5. Design Reviews and Inspections: SCE shall have the right to review the design of a Producer's Generating and Interconnection Facilities and to inspect a Producer's Generating and/or Interconnection Facilities prior to the commencement of Parallel Operation with SCE's Distribution System. SCE may require a Producer to make modifications as necessary to comply with the requirements of this Rule. SCE's review and authorization for Parallel Operation shall not be construed as confirming or endorsing the Producer's design or as warranting the Generating and/or Interconnection Facilities (T) safety, durability or reliability. SCE shall not, by reason of such review or lack of review, be responsible for the strength, adequacy, or capacity of such equipment.

6. Right to Access: A Producer's Generating Facility and/or Interconnection Facilities shall (T) be reasonably accessible to SCE personnel as necessary for SCE to perform its duties and exercise its rights under its tariffs approved by the Commission, and any Interconnection Agreement between SCE and the Producer.

7. Confidentiality of Information: Any information pertaining to Generating and/or Interconnection Facilities provided to SCE by a Producer shall be treated by SCE in a confidential manner. SCE shall not use information contained in the Application to (T) propose discounted tariffs to the Customer unless authorized to do so by the Customer or | the information is provided to SCE by the Customer through other means. (T)

8. Prudent Operation and Maintenance Required: A Producer shall operate and maintain its Generating Facility and Interconnection Facilities in accordance with Prudent Electrical Practices and shall maintain compliance with this Rule.

9. Curtailment and Disconnection: SCE may limit the operation or disconnect or require the disconnection of a Producer's Generating Facility from SCE's Distribution System at any time, with or without notice, in the event of an Emergency, or to correct Unsafe Operating Conditions. SCE may also limit the operation or disconnect or require the disconnection (T) of a Producer's Generating Facility from SCE's Distribution System upon the provision of reasonable written notice: 1) to allow for routine maintenance, repairs or modifications to SCE's Distribution System; 2) upon SCE's determination that a Producer's Generating Facility is not in compliance with this Rule; or 3) upon termination of the Interconnection Agreement. Upon the Producer's written request, SCE shall provide a written explanation of the reason for such curtailment or disconnection.

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 39415-E*
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 36867-E

GENERATING FACILITY INTERCONNECTIONS

(Continued)

C. Application and Interconnection Process

1. Application Process

a. Applicant Initiates Contact with SCE: Upon request, SCE will provide information and documents (such as sample agreements, Application, technical information, listing of Certified Equipment, Initial and Supplemental Review fee information, applicable tariff schedules and Metering requirements) to a potential Applicant. Unless otherwise agreed upon, all such information shall normally be sent to an Applicant within three (3) business days following the initial request from the Applicant. SCE will establish an individual representative as the single point of contact for the Applicant, but may allocate responsibilities among its staff to best coordinate the Interconnection of an Applicant's Generating Facility.

b. Applicant Completes an Application: All Applicants shall complete and file an Application and supply any relevant additional information requested by SCE. When applicable per Table C.1, an $800 Initial Review fee shall be included with the Application.

(1) Normally, within 10 business days of receiving the Application, SCE shall acknowledge its receipt and state whether the Application has been completed adequately. If defects are noted, SCE and Applicant shall cooperate in a timely manner to establish a satisfactory Application.

(2) The Initial Review fee shall be waived for Applications requesting Interconnection pursuant to Sections 2827, 2827.8, 2827.9, or 2827.10 of the Public Utilities Code, and for Solar powered Generating Facilities that do not sell power to the grid per Commission Decision D. 01-07-027.

(3) Fifty percent (50%) of the fees associated with the Initial Review will be returned to the Applicant if the Application is rejected by SCE or the Applicant retracts the Application.

(4) Applications that are over one year old (from the date of SCE's acknowledgement) without a signed Interconnection Agreement, or a Generating Facility that has not been approved for parallel operation within one year of completion of all applicable review and/or studies are subject to cancellation by SCE; however, SCE may not cancel an Application if the producer provides reasonable evidence that the project is still active.

(5) The applicant may propose, and SCE may agree to reduced costs for reviewing atypical applications, such as Applications submitted for multiple Generators, multiple sites, or otherwise as conditions warrant. (T)

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company
Southern California Edison Revised Cal. PUC Sheet No. 36868-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 31577-E

(Continued)

C. Application and Interconnection Process (Continued)

1. Application Process (Continued)

c. SCE Performs an Initial and Supplemental Review and Develops Preliminary Cost Estimates and Interconnection Requirements.

(1) Upon receipt of a satisfactorily completed Application and any additional information necessary to evaluate the Interconnection of a Generating Facility, SCE shall perform an Initial Review using the process defined in Section I. The Initial Review determines if (a) the Generating Facility qualifies for Simplified Interconnection, or (b) the Generating Facility requires a Supplemental Review.

(2) SCE shall complete its Initial Review, absent any extraordinary circumstances, within 10 business days after its determination that the Application is complete. If the Initial Review determines the proposed Generating Facility can be interconnected by means of a Simplified Interconnection, SCE will provide the Applicant with an Interconnection Agreement for Applicant's signature.

(3) If the Generating Facility does not pass the Initial Review for Simplified Interconnection as proposed, SCE will notify the Applicant and perform a Supplemental Review as described in Section I. Applicant shall pay an additional $600 for the Supplemental Review, unless the Application is withdrawn. The Supplemental Review will result in SCE providing either: (a) Interconnection requirements beyond those for a Simplified Interconnection, and an Interconnection Agreement for Applicant's signature; or (b) a cost estimate and schedule for an Interconnection Study. The Supplemental Review shall be completed, absent any extraordinary circumstances, within 20 business days of receipt of a completed Application and fees.

The Supplemental Review fee shall be waived for Applications requesting Interconnection pursuant to Sections 2827, 2827.8, 2827.9, or 2827.10 of the Public Utilities Code, and for Solar powered Generating Facilities that do not sell power to the grid, per Commission Decision D. 01-07-027. (N)

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 41287-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 40112-E

GENERATING FACILITY INTERCONNECTIONS

(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

Generating Facility Type	Initial Review Fee	Supplemental Review Fee	Interconnection Study Study Fees	Additional Commissioning Test Verification
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.

(L)

(Continued)

(Continued)

C. Application and Interconnection Process (Continued)

Application Process (Continued)

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

Existing Generator	New Generator	Initial Review Fee		Supplemental Review Fee		Detailed Interconnection Study Cost		Interconnection Facilities Cost		Distribution System Modifications Cost	
		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.

(N)

2. Interconnection Process (L)

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. (L)

(Continued)

(Continued)

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 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.

(Continued)

(Continued)

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 106 volts to 127 volts (on a 120 (T)
volt basis), inclusive, and a frequency range of 59.3 Hz to 60.5 Hz, (T)
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.

(Continued)

(Continued)

D. Generating Facility Design and Operating Requirements (Continued)

1. General Interconnection and Protective Function Requirements (Continued) (T)

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) a) for Emergency purposes be capable of being reached quickly and conveniently 24 hours a day by SCE personnel for construction, operation, maintenance, inspection, testing or to isolate the Generating Facility from SCE's Distribution System without obstacles or requiring those seeking access to obtain keys, special permission, or security clearances.

b) for Non Emergency purposes be capable of being reached during normal business hours. SCE, where possible, will provide notice to Customer for gaining access to Customer's premises.

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. If the switch is not accessible outside the locked premises, signage with contact information and a SCE approved locking device for the premises shall be installed. (L)

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 48232-E*
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48159-E

GENERATING FACILITY INTERCONNECTIONS

(Continued)

D. Generating Facility Design and Operating Requirements (Continued)

1. General Interconnection and Protective Function Requirements (Continued)

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

e. The maximum aggregated Gross Ratings for all the Generating Facilities connected to a secondary distribution transformer shall not exceed the transformer rating, modified per established utility practice, absent any customer generators. When SCE's analysis determines a transformer, change is required. SCE will furnish the customer with an explanation of why the change is needed. (N)

f. Generating Facilities connected to a single-phase transformer with 120/240 V secondary voltage must be installed such that the aggregated gross output is as balanced as practicable between the two phases of the 240 volt service. When SCE's analysis determines a transformer change is required. SCE will furnish the customer with an explanation of why the change is needed. (N)

g. 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. (T)

h. 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. (T)

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 48233-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48160-E

(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. Voltage Trip Setting: 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. (T)

(1) Generating Facilities (30 kVA or less): Generating Facilities with a Gross Rating of 30 kVA or less shall be capable of operating within the voltage range normally experienced on SCE's Distribution System from plus to minus 5% of the nominal voltage (e.g. 114 volts to 126 volts, on a 120 volt base), at the service panel or PCC. The trip settings at the generator terminals may 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) to compensate for voltage drop between the generator terminals and the PCC. Voltage may be detected at either the PCC or the Point of Interconnection. However, the voltage range at the PCC, with the generator on-line, shall stay within +/-5% of nominal. (T) (T) (T) (T) (T)

(2) Generating Facilities (greater than 30 kVA): SCE may have specific operating voltage ranges for Generating Facilities with Gross Ratings greater than 30 kVA, and may require adjustable operating voltage settings. In the absence of such requirements, the Generating Facility shall be capable of operating 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. However, the voltage range at the PCC, with the generator on-line, shall stay within +/-5% of nominal. (T) (T) (T) (T) (T)

(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:

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 48234-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48161-E

(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 for Generating Facilities*				(T)
Voltage at Point of Common Coupling (the ranges below are used to trip the generator during abnormal distribution system conditions)		Maximum Trip Time**		(T)
Assuming 120 Volt Base	% of Nominal Voltage	# of Cycles (Assuming 60 Hz Nominal)	Seconds	(T) ((T)
Less than 60 volts	Less than 50%	10 Cycles	0.16 Seconds	(T)
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	((T)
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	(T)
Greater than 144 volts	Greater than 120%	10 Cycles	0.16 Seconds	(T)

**For Generating Facilities with a 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.* (N) (N)

*** "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 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 for a Generating Facility to minimize tripping during short term system disturbances. Set points shall not be user adjustable for generating facilities less than 30 kW.* (T) | | | (T)

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)

(L)

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 48235-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48161-E

GENERATING FACILITY INTERCONNECTIONS

(Continued)

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

2. Prevention of interference. (Continued)

b. Operating Voltage Range (Continued)

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. (L)

e. Integration with SCE's Distribution System Grounding: The grounding scheme of the Generating Facility 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). (T) (L)

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 48236-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48162-E

(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

Generating Facility Rating	Frequency Range (Assuming 60Hz Nominal)	Maximum Trip Time *[1]* (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 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. (T)

[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 in Table D.3. The harmonic current injections shall be (T) 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 shall be (T) evaluated using the same criteria as for the Host Loads. (T)

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 48237-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48163-E

(Continued)

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: The Producer shall provide adequate reactive power compensation on site to maintain the Generating Facility power factor near unity at rated output or an SCE specified power factor within a power factor range from 0.9 leading to 0.9 lagging, based on local system conditions. While not required, for generators that do not have inherent reactive power control capability SCE at its option may offer reactive power support in the form of power factor correction capacitors on its distribution system, under an Added Facilities agreement, as described in section E.3.a or Rule 2. H, as applicable. (N) (N) (D)

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 Rating. (T)

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 48238-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48164-E

(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.

4. Supplemental Generating Facility Requirements (D)

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 recluse-blocking on some of the automatic reclosing devices.

(Continued)

(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.

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company
Southern California Edison Revised Cal. PUC Sheet No. 48240-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48166-E

GENERATING FACILITY INTERCONNECTIONS

(Continued)

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.

(Continued)

(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.

(Continued)

(Continued)

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. (T)

F. Metering, Monitoring and Telemetering

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.

(Continued)

(Continued)

F. Metering, Monitoring and Telemetering (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.

(Continued)

(Continued)

F. Metering, Monitoring and Telemetering (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.

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.

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.

(Continued)

(Continued)

F. Metering, Monitoring and Telemetering (Continued)

5. Telemetering: If the nameplate rating of the Generating Facility is 1 MW or greater, Telemetering 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 Telemetering equipment may be required on Generating Facilities 250 kW or greater. SCE shall only require Telemetering 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 Telemetering 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.

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.

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:

(Continued)

(Continued)

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.

(Continued)

(Continued)

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.

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company
Southern California Edison Revised Cal. PUC Sheet No. 48248-E*
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48174-E

(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: Whenever in SCE's discretion an Unsafe Operating Condition or other hazardous condition exists or whenever access is necessary for emergency service restoration, and such immediate action is necessary to protect persons, SCE's facilities or property of others from damage or interference caused by Customer's Generating Facility, or the failure of protective device to operate properly, or a malfunction of any electrical system equipment or a component part thereof.

(Continued)

(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 Rating; Gross Nameplate Rating; Gross Capacity or Gross Nameplate Capacity: (T)
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.

(Continued)

(Continued)

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.

(Continued)

(Continued)

H. Definitions (Continued)

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

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

Non Emergency: Conditions or situations that are not Emergencies, including but not limited to meter reading, inspection, testing, routine repairs, replacement, and maintenance.

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.

(Continued)

(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).

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company
Southern California Edison Revised Cal. PUC Sheet No. 48253-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48179-E

(Continued)

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.

Telemetering: 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.

(Continued)

(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.

(Continued)

(Continued)

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

3. Review Process Details

Initial and Supplemental Review Process Flow Chart

(T)

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company
Southern California Edison Revised Cal. PUC Sheet No. 48256-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48182-E

(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:

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 Rating, with a maximum 2.0 second time delay. (T)

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 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 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. (T) (T)

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 be increasing the size of the customer's service panel, without separate approval for the resize. (T)

Option 4 (Relative Generating Facility Rating): This option, when used, requires the Net 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.

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 48257-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48183-E

(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.

(Continued)

(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.

(Continued)

(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 Rating of the Generating Facility 11 kVA or less? (T)

- 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.

(Continued)

(Continued)

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.

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company
Southern California Edison Revised Cal. PUC Sheet No. 48261-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48187-E

(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."

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 48262-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48188-E

(Continued)

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.

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 48263-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48189-E

(Continued)

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

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 48264-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48190-E

(Continued)

J. Certification And Testing Criteria (Continued)

3. Type Testing (Continued)

Table J.2 Type Tests Sequence for Interconnection Equipment Certification

Test No.	Type Test
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.

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 48265-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48191-E

(Continued)

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.

(Continued)

(Continued)

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 (ΔΦ,°)
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:

(Continued)

(Continued)

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.

(Continued)

(Continued)

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.

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Southern California Edison Revised Cal. PUC Sheet No. 48269-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48195-E

(Continued)

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.

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company
Southern California Edison Revised Cal. PUC Sheet No. 48270-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48196-E

(Continued)

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.

(Continued)

(Continued)

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.

(Continued)

(Continued)

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).

(Continued)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company
Southern California Edison Revised Cal. PUC Sheet No. 48273-E
Rosemead, California (U 338-E) Cancelling Revised Cal. PUC Sheet No. 48199-E

(Continued)

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.

(Continued)

(Continued)

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.

(Continued)

(Continued)

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)