

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



November 14, 2022

Advice Letter 6663-E-A, 6663-E-B

Sidney Bob Dietz II
Director, Regulatory Relations
Pacific Gas and Electric Company
77 Beale Street
San Francisco, California 94177
E-mail: PGETariffs@pge.com

SUBJECT: Advice Letter Modifying Electric Rule 21 Pursuant to Resolution E-5172

Dear Mr. Dietz:

Pacific Gas and Electric Company Advice Letter 6663-E-A, 6663-E-B is effective as of November 4, 2022.

Sincerely,

A handwritten signature in black ink that reads "Leuwam Tesfai".

Leuwam Tesfai
Deputy Executive Director for Energy and Climate Policy/
Director, Energy Division
California Public Utilities Commission

August 12, 2022

Advice 6663-E-A

(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

Subject: Supplemental: Advice Letter Modifying Electric Rule 21 Pursuant to Resolution E-5172

Purpose

Pacific Gas and Electric Company (PG&E) hereby submits this Supplemental Tier 1 Advice Letter (AL) to modify Electric Rule 21 - *Generating Facility Interconnections* - in compliance with the California Public Utilities Commission (CPUC, Commission) Resolution E-5172,¹ *Approval, with Modifications, of utilities' Advice Letters seeking proposed modifications to Electric Rule 21 Tariff in Compliance with Decision 20-09-035, Ordering Paragraphs 2, 6, 11, 12, and 23 (Resolution E-5172 or Resolution)*.

PG&E's original Advice Letter 6663-E² made modifications identified in Resolution E-5172 to the tariffs submitted in AL 5915-E-B. This supplemental advice letter replaces Advice Letter 6663-E in its entirety and makes revisions identified in Resolution E-5172 with exclusion of language pertaining to Ordering Paragraphs (OP) 2 and 11 of CPUC Decision (D.) 20-09-035³ (Working Group 2 and 3 Decision or Decision), pursuant to the Commission's granting of PG&E's *Request for Extension of Time to Comply with D.20-09-035 Ordering Paragraphs 2, 6, and 11 as Discussed in Resolution E-5172*. Concurrent with this advice letter, PG&E is also submitting AL 6678-E with an effective date of September 26, 2022 for revisions related to CPUC D. 20-09-035 OP 2 and 11.

This advice letter also includes revisions recommended by the Interstate Renewable Energy Council (IREC) to align with Resolution E-5172.

¹ [CPUC Resolution E-5172](#) - Date of Issuance June 23, 2022 – *Approval, with Modifications, of utilities' Advice Letters seeking proposed modifications to Electric Rule 21 Tariff in Compliance with Decision 20-09-035, Ordering Paragraphs 2, 6, 11, 12, and 23*

² [AL 6663-E](#) Advice Letter Modifying Electric Rule 21 Pursuant to Resolution E-5172

³ [Decision 20-09-035](#) - Date of Issuance 9/30/2020 - *Decision Adopting Recommendations from Working Groups Two, Three, and Subgroup*

Background

Rulemaking 17-07-007 and Working Groups

On July 13, 2017, The Commission adopted Order Instituting Rulemaking (R.) 17-07-007 to consider refinements to Electric Tariff Rule 21 of PG&E, San Diego Gas & Electric Company (SDG&E), and Southern California Edison Company (SCE) (jointly, Utilities) regarding the interconnection of distributed energy resources.⁴

The October 2, 2017, *Scoping Memo of Assigned Commissioner and Administrative Law Judge* (Scoping Memo) set forth the scope and schedule of the proceeding, including establishment of the working group process, whereby resolution of the technical issues of the proceeding would be proposed by Working Groups One through Six.

CPUC Decision 20-09-035

The CPUC issued CPUC D. 20-09-035 on September 30, 2020, which modified each Utility's Electric Tariff Rule 21. At a high level, the Decision streamlined the interconnection process by incorporating the Integration Capacity Analysis results from R. 14-08-013, the Distribution Resources Plans proceeding, and also improving efficiency, transparency, certainty, and clarity.

AL 6014-E and AL 6014-E-A

On November 30, 2020, PG&E submitted Tier 2 AL 6014-E⁵ 60 days after the issuance of D. 20-09-035, as ordered by that decision. That advice letter was protested. Supplemental AL 6014-E-A⁶ was submitted June 25, 2021, addressing Ordering Paragraphs (OP) 1, 3, 4, 17 and 18, but OPs 2, 12, and 23 were not addressed there.

AL 5915-E

On January 28, 2021, PG&E submitted the original advice letter AL 5915-E 120 days after the issuance of D. 20-09-035, as ordered by that decision. That advice letter was protested.

AL 5915-E-A and IREC Protest

On September 3, 2021, PG&E submitted supplemental AL 5915-E-A addressing the unresolved OPs in advice letters AL 6014-E-A (the "60 day" supplemental) for OPs

⁴ The Rule 21 tariff describes the interconnection, operating, and metering requirements for certain generating and storage facilities seeking to connect to the electric distribution system. Rule 21 provides customers access to the electric grid to install generating or storage facilities while protecting the safety and reliability of the distribution and transmission systems at the local and system levels. (See R.17-07-007 at p2.)

⁵ [AL 6014-E](#) *Advice Letter Modifying Electric Rule 21 Pursuant to Decision 20-09-035 for Working Group 2 and 3* (due 60 Days from Issuance)

⁶ [AL 6014-E-A](#) - *Supplemental: Advice Letter Modifying Electric Rule 21 Pursuant to Decision 20-09-035 for Working Group 2 and 3* (due 60 Days from Issuance)

2,12, and 23 and AL 5915-E (the “120 days” AL) addressing additional change to OPs 5, 6, 8 and 11. This AL was subsequently protested by IREC on September 10, 2021. The joint IOUs submitted a protest response on September 17, 2021. This advice letter incorporated changes the utilities agreed to make in that protest response, based on guidance from Energy Division.

AL 5915-E-B

On November 4, 2021, PG&E submitted supplemental AL 5915-E-B⁷, adopting changes PG&E agreed to make in its protest response to IREC’s protest of PG&E Advice Letter 5915-E-A.

Resolution E-5172

On June 28, 2022, the CPUC issued Resolution E-5172, approving, with modifications, PG&E’s AL 5915-E-B. The CPUC further directed PG&E to file a Tier 1 compliance Advice Letter within 30 days to modify Electric Rule 21 Tariff in accordance with Resolution E-5172.

Advice Letter 6663-E and IREC’s Comments

On July 25, 2022, PG&E submitted AL 6663-E, making modifications to its Electric Rule 21 tariff as identified in Resolution E-5172.

On August 1, 2022 IREC reached out to PG&E, indicating that they had found inconsistencies between PG&E’s AL 6663-E and the language adopted by the Commission in Resolution E-5172 as it related to the flow chart and the Screen M and N language. IREC asked if PG&E would agree to revise the advice letter to match the language found in the Resolution.

PG&E’s Request for an Extension and PG&E’s Concurrent Advice Letter 6678-E

The Commission ordered in Resolution E-5172 that PG&E’s AL 5915-E-B shall be in effect 45 days after approval of the Resolution. On July 26, 2022, PG&E submitted its *Request for Extension of Time to Comply with D.20-09-035 Ordering Paragraphs 2, 6, and 11 as Discussed in Resolution E-5172* (Request).

On August 9, 2022, the Commission’s Executive Director granted the Request in part and rejected in part, extending the compliance period to September 26, 2022 to comply with Ordering Paragraph 7 of Resolution E-5172 and implement Ordering Paragraphs 2 and 11 of D.20-09-035.

Accordingly, this advice letter contains changes to PG&E’s Rule 21 tariff in compliance with Resolution E-5172 with an effective date of August 7, 2022. Concurrently, PG&E

⁷ [AL 5915-E-B](#) – Second Supplemental: Advice Letter Modifying Electric Rule 21 Pursuant to Decision 20-09-035 for Working Group 2 and 3 (due 120 Days from Issuance) for Ordering Paragraphs 6 and 11.

is submitting Advice Letter 6678-E with revisions to PG&E's Rule 21 that are effective on September 26, 2022.

Overview

The ordering paragraphs in Resolution E-5172 require:

"2. Pacific Gas and Electric, Southern California Edison, and San Diego Gas & Electric shall each file a Tier 1 compliance Advice Letter within 30 days to modify Electric Rule 21 Tariff in accordance with Ordering Paragraphs 3 through 6 below.

3. Pacific Gas and Electric, Southern California Edison, and San Diego Gas & Electric shall modify Electric Rule 21: 1) to use the term "active power output" instead of the terms "real power production" and "real power output", and 2) use the term "ICA-SG 576 Profile" instead of the term "Generating ICA Profile."

4. Pacific Gas and Electric, Southern California Edison, and San Diego Gas & Electric shall modify Electric Rule 21 Screen M and N tariff language using the exact language in Appendices A and B with no omissions, additions, or modifications of any kind.

5. Pacific Gas and Electric, Southern California Edison, and San Diego Gas & Electric shall modify the Interconnection Technical Framework Overview flowchart in accordance with Appendix E.

6. Pacific Gas and Electric, Southern California Edison, and San Diego Gas & Electric shall modify Electric Rule 21 tariff on design and construction timelines in accordance with Appendix D and use reasonable efforts to comply with the timelines specified in Ordering Paragraph 23 of Decision 20-09-035 and to work with the applicants to reach a reasonable timeline when an emergency occurs."

Therefore, based on all of the above, PG&E modifies the Rule 21 as discussed below.

Tariff Changes

Consistent with OPs 3 through 6 of Resolution E-5172, the following changes have been made to PG&E's Rule 21.

- ~~• Modifications throughout the Electric Rule 21 tariff to change terminology from "real power production" and "real power output" to "active power output"~~⁸

⁸ The CPUC granted PG&E's *Request for an Extension of Time To Comply with D.20-09-035 Ordering Paragraphs 2, 6, and 11 as Discussed in Resolution E-5172*. Accordingly, these revisions will be submitted in PG&E's AL 6678-E submitted concurrently with this advice letter.

- Modifications to change terminology from “Generating ICA Profile” to “ICA-SG 576 Profile”;
- Modifications to Electric Rule 21 regarding Screen M and N to align with language in Resolution E-5172 Appendices A and B;⁹
- Modifications to the Interconnection Technical Framework Overview flowchart (Section G Engineering Review Details flow chart, original Sheet 145), in accordance with Resolution E-5172 Appendix E;
- Modifications on the design and construction timelines in Electric Rule 21 tariff Section F, in accordance with Resolution E-5172 Appendix D.

As discussed above, PG&E made additional revisions to the language as indicated by IREC, to align the language in PG&E’s Rule 21 flow chart and Screen N with the language adopted by the Commission in Resolution E-5172. IREC recommended the following changes:¹⁰

Screen N:

- Add the word “value” on PG&E’s Sheet 163 in this parenthetical: “(lowest **value** of the ICA-SG profile or lowest value at each hour)”;
- Delete the first bullet point on Sheet 164 (second bullet point under “ii) Screen F1: Did the Interconnection Request pass Screen F1?”) beginning with: “If the failure(s) cannot . . .”;
- Delete the word “default” in the second bullet on Sheet 164 (under “ii) Screen F1: Did the Interconnection Request pass Screen F1?”) in this sentence: “If voltage is a prevailing constraint, then the full range of smart inverter functions including the **default** volt/var function will be used . . .”;

Flow Chart Sheet 146

- In Screen J, change “11 kVA” to “30 kVA”;
- In Screen L, delete the letter “T”;
- In Screen M, add the language “for all line sections bounded by automatic sectionalizing devices?”;

⁹ The CPUC granted PG&E’s *Request for an Extension of Time To Comply with D.20-09-035 Ordering Paragraphs 2, 6, and 11 as Discussed in Resolution E-5172*. Accordingly, some of these revisions will be submitted in PG&E’s AL 6678-E, submitted concurrently with this advice letter.

¹⁰ IREC also recommended a revision to Screen M. However, as the CPUC granted PG&E’s *Request for an Extension of Time To Comply with D.20-09-035 Ordering Paragraphs 2, 6, and 11 as Discussed in Resolution E-5172*, certain revisions will be submitted in PG&E’s AL 6678-E, submitted concurrently with this advice letter.

Design and Construction Timeline Sheet 145

- On Sheet 145, delete the language “Subject to emergencies, delays from other agencies, and other reasons, the standard timeline for design and construction of interconnection-related Distribution Upgrades is as follows:”

PG&E’s changes from this supplemental AL will be denoted in the redlined tariff in **red**.

In addition, PG&E made ministerial changes as needed to correct typographical errors and align language with the model tariff language provided in Resolution E-5172.

For convenience of the reader, PG&E has included “track-change” or “redline” revisions of Rule 21 in Attachment 2. PG&E implemented the use of the “(P)” symbol for Electric Rule 21 to signify material subject to change under a pending advice letter. The redlines in Attachment 2 are color coded to the specific advice letter. See Attachment 2 cover sheet for more details.

Protests

Pursuant to GO 96-B, General Rule 7.5.1, PG&E requests to maintain the original protest and comment period designated in Advice 6663-E and not reopen the protest period.

Effective Date

Pursuant to Resolution E-5172, this advice letter is submitted with a Tier 1 designation. In compliance with OP 7 of Resolution E-5172, this advice letter is requested to become effective August 7, 2022, 45 days after approval of the Resolution.

Notice

In accordance with General Order 96-B, Section IV, a copy of this advice letter is being sent electronically to parties shown on the attached list and the parties on the service list for R.17-07-007 (Rule 21). Address changes to the General Order 96-B service list should be directed to PG&E at email address PGETariffs@pge.com. For changes to any other service list, please contact the Commission’s Process Office at (415) 703-2021 or at Process_Office@cpuc.ca.gov. Send all electronic approvals to PGETariffs@pge.com. Advice letter submittals can also be accessed electronically at: <http://www.pge.com/tariffs/>.

/S/

Sidney Bob Dietz II
Director, Regulatory Relations

cc: Service List R.17-07-007
IREC, c/o Yochi Zakai, yzakai@smwlaw.com

Attachments:

Attachment 1 – Clean version of updated Rule 21 Tariff

Attachment 2 – Redline Tariff Revisions



ADVICE LETTER SUMMARY

ENERGY UTILITY



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

Company name/CPUC Utility No.: Pacific Gas and Electric Company (ID U39 E)

Utility type:

- ELC GAS WATER
 PLC HEAT

Contact Person: Kimberly Loo

Phone #: (415)973-4587

E-mail: PGETariffs@pge.com

E-mail Disposition Notice to: KELM@pge.com

EXPLANATION OF UTILITY TYPE

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

(Date Submitted / Received Stamp by CPUC)

Advice Letter (AL) #: 6663-E-A

Tier Designation: 1

Subject of AL: Supplemental: Advice Letter Modifying Electric Rule 21 Pursuant to Resolution E-5172

Keywords (choose from CPUC listing): Compliance, Rule 21

AL Type: Monthly Quarterly Annual One-Time Other:

If AL submitted in compliance with a Commission order, indicate relevant Decision/Resolution #: Resolution E-5172, D.20-09-035

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL: No

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

Confidential treatment requested? Yes No

If yes, specification of confidential information:

Confidential information will be made available to appropriate parties who execute a nondisclosure agreement. Name and contact information to request nondisclosure agreement/ access to confidential information:

Resolution required? Yes No

Requested effective date: 8/7/22

No. of tariff sheets: 8

Estimated system annual revenue effect (%): N/A

Estimated system average rate effect (%): N/A

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

Tariff schedules affected: See Attachment 1

Service affected and changes proposed¹: N/A

Pending advice letters that revise the same tariff sheets: 6635-E-A

¹Discuss in AL if more space is needed.

Protests and correspondence regarding this AL are to be sent via email and are due no later than 20 days after the date of this submittal, unless otherwise authorized by the Commission, and shall be sent to:

California Public Utilities Commission
Energy Division Tariff Unit Email:
EDTariffUnit@cpuc.ca.gov

Contact Name: Sidnev Bob Dietz II. c/o Megan Lawson
Title: Director, Regulatory Relations
Utility/Entity Name: Pacific Gas and Electric Company

Telephone (xxx) xxx-xxxx:
Facsimile (xxx) xxx-xxxx:
Email: PGETariffs@pge.com

Contact Name:
Title:
Utility/Entity Name:

Telephone (xxx) xxx-xxxx:
Facsimile (xxx) xxx-xxxx:
Email:

CPUC
Energy Division Tariff Unit
505 Van Ness Avenue
San Francisco, CA 94102

Clear Form

Cal P.U.C. Sheet No.	Title of Sheet	Cancelling Cal P.U.C. Sheet No.
53930-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 145	51790-E
53931-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 146	51791-E**
53932-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 163	51808-E
53933-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 164	51809-E
53934-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 165	51810-E
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53936-E	ELECTRIC TABLE OF CONTENTS Sheet 1	53897-E
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**ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS**

Sheet 145

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

7. COST ENVELOPE OPTION (Cont'd.)

f. Modifications

Under the Independent Study Process, any requested modifications, including required updates to costs under the Cost Envelope Option, shall be made in accordance with Section F.3.b.v. If Applicant elects to proceed with re-evaluation of the costs under the Cost Envelope Option pursuant to Section F.3.b.v, Distribution Provider shall complete the re-evaluation within the sum of the time allowed for each step utilized by the Distribution Provider for preparation of the initial Cost Envelope Estimate pursuant Section F.3.b from receipt of all required technical data related to the proposed changes and payment of the estimated cost of the re-evaluation.

g. Tender of the Generator Interconnection Agreement Under the Cost Envelope Option

Negotiation and execution of the Generator Interconnection Agreement shall be in accordance with Section F.2.e for Interconnection Requests evaluated under the Fast Track Process, and in accordance with Section F.3.e.ii for Interconnection Requests evaluated under the Independent Study Process.

8. DESIGN AND CONSTRUCTION TIMELINE

The standard timeline for design and construction of interconnection-related Distribution Upgrades is as follows: (T)

- i) 60 business days for design and 60 business days for construction, or
- ii) Design and construct timelines as agreed to between Applicant and Distribution Provider.

Distribution Provider shall use Reasonable Efforts to comply with these timelines and shall work with Applicant to reach a reasonable timeline when an emergency occurs. (N)
|
(N)

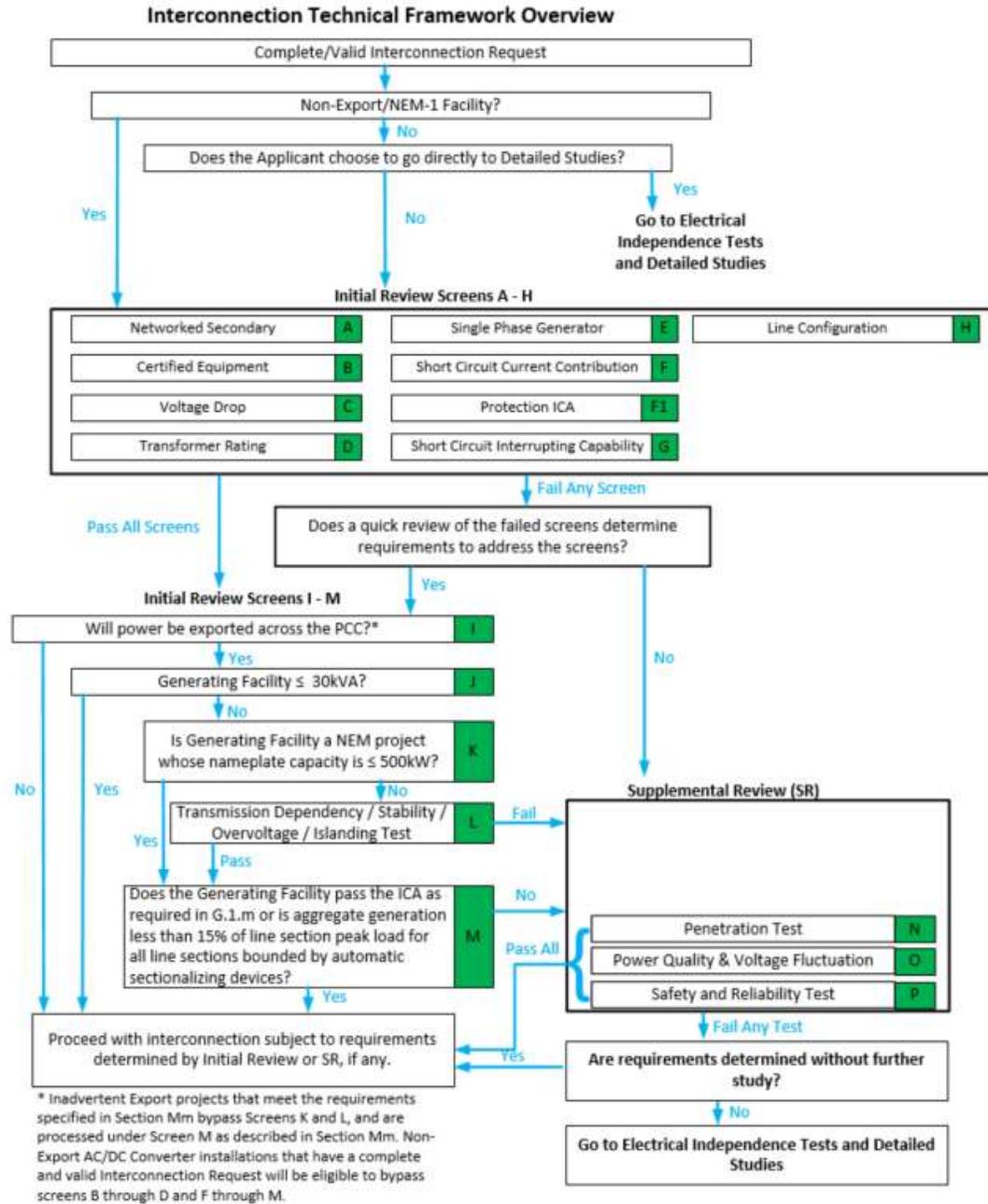
The 60-day clock commences upon payment and after Applicant has done everything necessary on its end to prepare for construction.

(Continued)



**ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS**

G. ENGINEERING REVIEW DETAILS



(T)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 163

G. ENGINEERING REVIEW DETAILS (Cont'd.)

2. SUPPLEMENTAL REVIEW SCREENS (Cont'd.)

If the failure(s) cannot be addressed in Supplemental Review for Screens N through P, and generation is 100% or less of than the applicable ICA value (lowest value of the ICA-SG profile or lowest value at each hour) the Distribution Provider must identify a reason and inform the customer why a specific technical constraint is not captured by the ICA and why the project must proceed to Electrical Independence Tests and Detailed Studies. Utilities also must address any concerns in the context of the Screen that triggers the mitigation or detailed study. (N)

a. Screen N: Penetration Test

If Integration Capacity Analysis Values are available at the requested Point of Interconnection, evaluate Screen N as follows:

i) Penetration Level Using ICA-SG 576 Profile: (T)

For Interconnection Requests based on Gross Nameplate Rating: Is the Generating Facility aggregate Gross Nameplate Rating less than or equal to 100% of the lowest value in the ICA-SG 576 Profile? (T)

For Interconnection Requests based on typical PV Generation Profile: Is the Generating Facility Generation Profile, based on PVWatts® or equivalent, less than or equal to 100% of the ICA-SG 576 Profile in any hour? (T)

ii) Screen F1: Did the Interconnection Request pass Screen F1?

If yes to both of the above (pass), continue to Screen O.

If "no" to either or both of the above(fail), the Distribution Provider must perform a quick review of the failure within Supplemental Review and determine the requirements to address the failure. (T)

- o If the Distribution Provider requires mitigations or Electrical Independence Tests and Detailed Studies, the Distribution Provider must provide the Customer the reason why. (N)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 164

G. ENGINEERING REVIEW DETAILS (Cont'd.)

2. SUPPLEMENTAL REVIEW SCREENS (Cont'd.)

a. Screen N: Penetration Test (Cont'd)

ii) Screen F1: Did the Interconnection Request pass Screen F1 (Cont'd)?

(D)
|
|
|
(D)

- If voltage is a prevailing constraint, then the full range of smart inverter functions including the volt/var function will be used in power flow analysis for the evaluation of the proposed project. This will reveal if the proposed project causes any voltage impacts of concern. If concerns related to steady state voltage, thermal, or protection exist and the Distribution Provider can identify simple upgrades through power flow analysis (e.g., installation of voltage regulator devices or protection devices to mitigate reduction of reach), then the Distribution Provider will determine the mitigation requirements within Screen N. When larger upgrades or complex protection evaluation is required, Screen N will fail, and the technical evaluation will be conducted under the Electrical Independence Tests or Detailed Study process. (T)
(T)

- If no reason for further study is identified, or if requirements to address the failure can be identified in screen N, proceed 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 if Applicant elects to proceed.

- If Integration Capacity Analysis Values are not available, evaluate Screen N as follows:

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 166

G. ENGINEERING REVIEW DETAILS (Cont'd.)

2. SUPPLEMENTAL REVIEW SCREENS (Cont'd.)

a. Screen N: Penetration Test (Cont'd.)

Note 2: 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. (T)

Note 3: Distribution Provider will not consider as part of the aggregate Generating Facility capacity for purposes of this screen Generating Facility capacity known to be already reflected in the minimum load data. (T)

Note 4: 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 WDT Transmission Cluster Study Process, but may be studied under the Independent Study Process. (T)

Significance: Penetration of Generating Facility capacity 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 Generating Facility capacity on the Line Section, distribution circuit, and/or substation.

i) 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?

ii) Can it be determined within the Supplemental Review that the voltage fluctuation is within acceptable limits as defined by IEEE 1547-2018, 7.2 or utility practice similar to IEEE 1547-2018, 7.2? (P)
(P)

(Continued)

<i>Advice</i>	6663-E-A	<i>Issued by</i>	<i>Submitted</i>	<u>August 12, 2022</u>
<i>Decision</i>	D.20-09-035	Meredith Allen	<i>Effective</i>	<u>August 7, 2022</u>
		<i>Vice President, Regulatory Affairs</i>	<i>Resolution</i>	<u>E-5172</u>



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Sheet 1

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.....	50640,53589,52256,53961,49309,49310,49311-E	

(Continued)

Attachment 2

Redline Tariff Revisions

For convenience of the reader, PG&E has included redline revisions in Attachment 2. **These redline revisions only include redlined sheets that have been modified in this advice letter (AL 6663-E-A).** Where Electric Rule 21 has been revised, the affected sheets are included in Attachment 1.

In this advice letter and accordance to CPUC General Order 96B, Section 9.5.3, PG&E has implemented the use of the “(P)” symbol to signify material subject to change under a pending advice letter. The redlines in Attachment 2 are color coded to the specific advice letter. The color coding is as follows:

Redline Text Color	Advice Letter	Subject	Comments
	6635-E	Modifications to Electric Tariff Rule 21 to Incorporate IEEE 1547.1-2020 Test Procedures into Testing Regime for Phase 2 and 3 Requirements in Compliance with Resolutions E-5000 and E 5036	This advice letter is superseded by Advice 6635-E-A. The redline changes remain in purple, so the additional supplemental changes can be identified compared to Advice 6635-E revisions.
	6635-E-A	Supplemental: Modifications to Electric Tariff Rule 21 to Incorporate IEEE 1547.1-2020 Test Procedures into Testing Regime for Phase 2 and 3 Requirements in Compliance with Resolutions E-5000 and E 5036	In this advice letter, revisions are made pursuant to Resolutions E-5000 and E-5036. Pending Approval.
	6663-E-A	Supplemental: Advice Letter Modifying Electric Rule 21 Pursuant to Resolution E-5172	In this advice letter, revisions are made pursuant to Resolution E-5172 with exclusion of language pertaining to Ordering Paragraphs (OP) 2 and 11 of CPUC Decision (D.) 20-09-035 (Working Group 2 and 3 Decision or Decision), pursuant to the Commission’s granting of PG&E’s <i>Request for Extension of Time to Comply with D.20-09-035 Ordering Paragraphs 2, 6, and 11 as Discussed in Resolution E-5172.</i>



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 140

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

7. COST ENVELOPE OPTION (Cont'd.)

f. Modifications

Under the Independent Study Process, any requested modifications, including required updates to costs under the Cost Envelope Option, shall be made in accordance with Section F.3.b.v. If Applicant elects to proceed with re-evaluation of the costs under the Cost Envelope Option pursuant to Section F.3.b.v, Distribution Provider shall complete the re-evaluation within the sum of the time allowed for each step utilized by the Distribution Provider for preparation of the initial Cost Envelope Estimate pursuant Section F.3.b from receipt of all required technical data related to the proposed changes and payment of the estimated cost of the re-evaluation.

g. Tender of the Generator Interconnection Agreement Under the Cost Envelope Option

Negotiation and execution of the Generator Interconnection Agreement shall be in accordance with Section F.2.e for Interconnection Requests evaluated under the Fast Track Process, and in accordance with Section F.3.e.ii for Interconnection Requests evaluated under the Independent Study Process.

8. DESIGN AND CONSTRUCTION TIMELINE

~~Subject to emergencies, delays from other agencies, and other reasons,~~ (T)
The standard timeline for design and construction of interconnection-related Distribution Upgrades is as follows: (T)

- i) 60 business days for design and 60 business days for construction, or
- ii) Design and construction timelines as agreed to between Applicant and Distribution Provider.

Distribution Provider shall use Reasonable Efforts to comply with these timelines and shall work with Applicant to reach a reasonable timeline when an emergency occurs. (N)
(N)

The 60-day clock commences upon payment and after Applicant has done everything necessary on its end to prepare for construction.

(Continued)



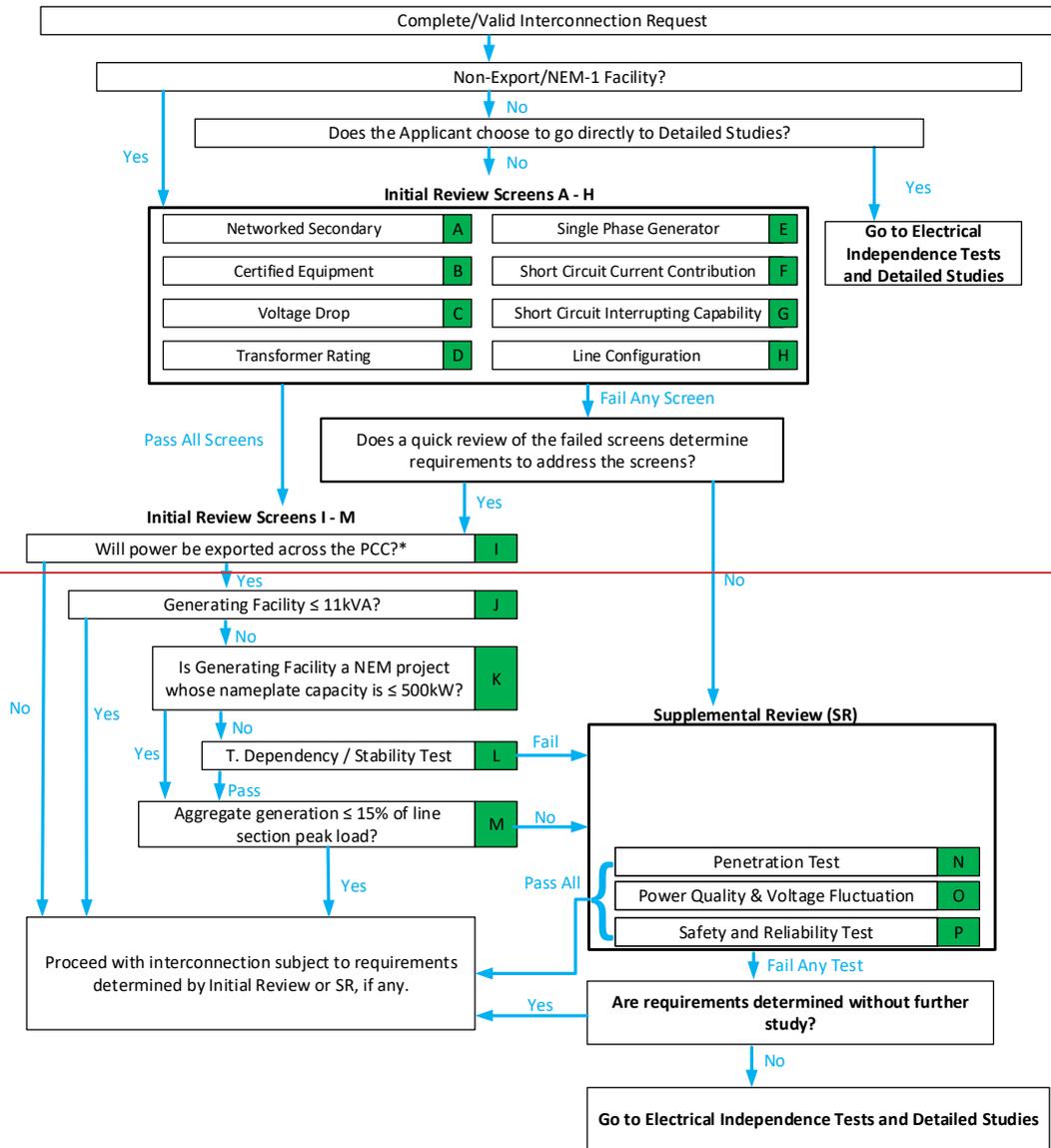
**ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS**

G. ENGINEERING REVIEW DETAILS

Delete table below:

Delete pending table below:

Interconnection Technical Framework Overview

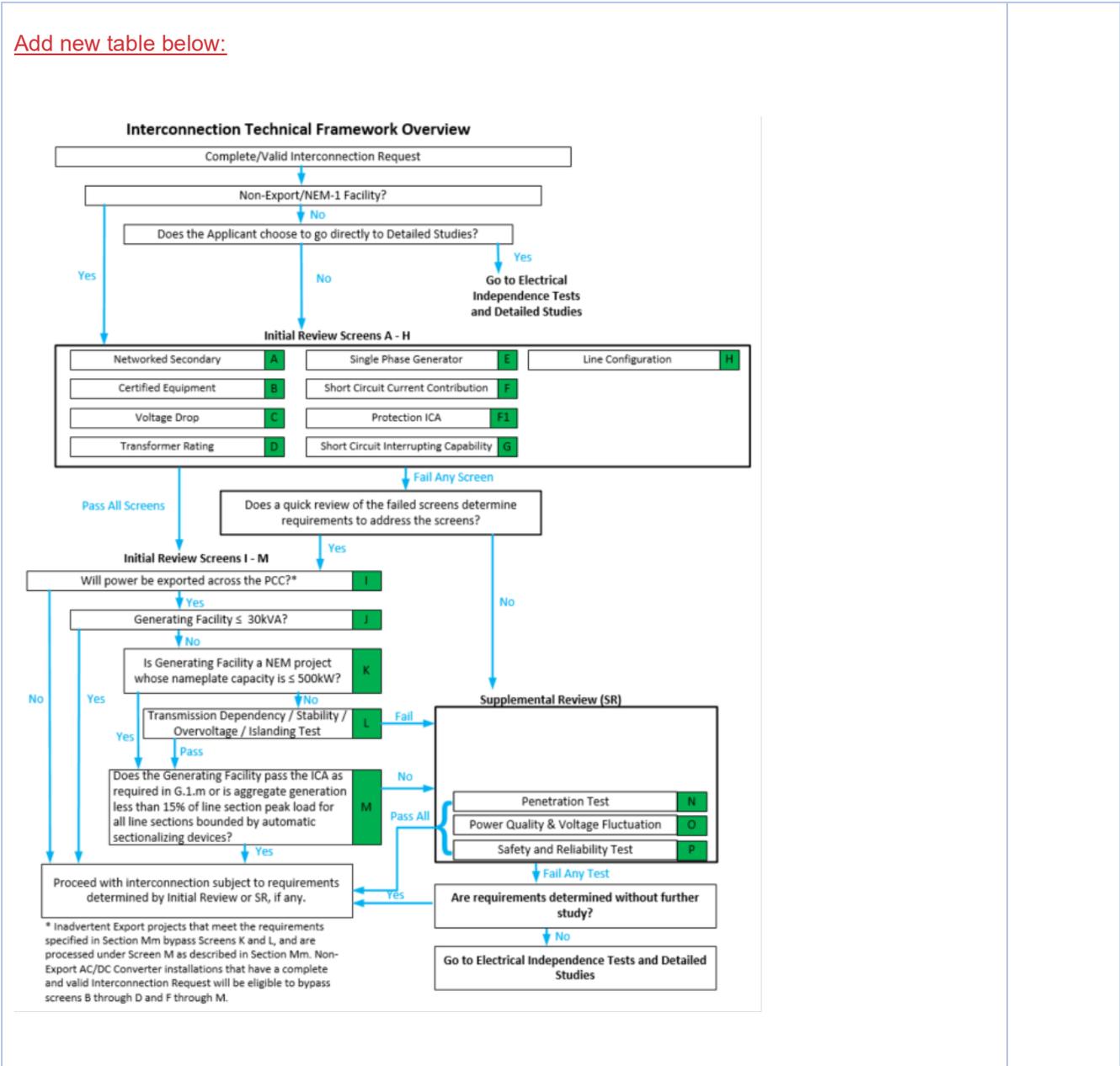


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ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Add new table below:



(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 156

G. ENGINEERING REVIEW DETAILS (Cont'd.)

2. SUPPLEMENTAL REVIEW SCREENS (Cont'd.)

If the failure(s) cannot be addressed in Supplemental Review for Screens N through P, and generation is 100% or less of than the applicable ICA value (lowest value of the ICA-SG profile or lowest value at each hour) the Distribution Provider must identify a reason and inform the customer why a specific technical constraint is not captured by the ICA and why the project must proceed to Electrical Independence Tests and Detailed Studies. Utilities also must address any concerns in the context of the Screen that triggers the mitigation or detailed study. (N)
↓
↓
↓
↓
(N)

a. Screen N: Penetration Test

If Integration Capacity Analysis Values are available at the requested Point of Interconnection, evaluate Screen N as follows:

i) Penetration Level Using ~~Generating ICA Profile~~ ICA-SG 576 Profile: (T)

For Interconnection Requests based on Gross Nameplate Rating: Is the Generating Facility aggregate Gross Nameplate Rating equal to or below 90% less than or equal to 100% of the lowest value in the ICA-SG 576 Profile? (T)
(T)

For Interconnection Requests based on typical PV Generation Profile: Is the Generating Facility Generation Profile, based on PVWatts® or equivalent, equal to or below 90% less than or equal to 100% of the ICA-SG ~~value at each hour in the ICA-SG 576 Profile~~ in any hour? (T)
(T)

ii) Screen F1: Did the Interconnection Request pass Screen F1?

If yes to both of the above (pass), continue to Screen O.

If "no" to either or both of the above (fail), the Distribution Provider must perform a quick review of the failure within Supplemental Review and may determine the requirements to address the failure; ~~otherwise Electrical Independence Tests or Detailed Studies are required.~~ (T)
(T)
(T)

o If the Distribution Provider requires mitigations or Electrical Independence Tests and Detailed Studies, the Distribution Provider must provide the Customer the reason why. If the failure(s) that cannot be addressed in Supplemental Review, the Distribution Provider will conduct a review to identify the reasons why further studies are required. (N)
↓
(N)
(D)
↓
(D)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 156

G. ENGINEERING REVIEW DETAILS (Cont'd.)

2. SUPPLEMENTAL REVIEW SCREENS (Cont'd.)

a. Screen N: Penetration Test (Cont'd)

ii) Screen F1: Did the Interconnection Request pass Screen F1 (Cont'd)?

~~o If the failure(s) cannot be addressed in Supplemental Review, and generation is 100% or less of the applicable ICA value (lowest value of the ICA-SG profile or lowest value at each hour) the Distribution Provider must identify a reason why a specific technical constraint is not captured by the ICA and the why the project must proceed to Electrical Independence Tests and Detailed Studies.~~

(D)
|
|
|
|
(D)

o If voltage is a prevailing constraint, then the full range of smart inverter functions including the default volt/var function will be used in power flow analysis for the evaluation of the proposed project. This will reveal if the proposed project causes any voltage impacts of concern. If concerns related to steady state voltage, thermal, or protection exist and the Distribution Provider can identify simple upgrades through power flow analysis (e.g., installation of voltage regulator devices or protection devices to mitigate reduction of reach), then the Distribution Provider will determine the mitigation requirements within Screen N. When larger upgrades or complex protection evaluation is required, Screen N will fail, and the technical evaluation will be conducted under the Electrical Independence Tests or Detailed Study process.

(T)
(T)

(T)
(T)

o If no reason for further study is identified, or if requirements to address the failure can be identified in screen N, proceed to Screen O.

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 if Applicant elects to proceed.

o If Integration Capacity Analysis Values are not available, evaluate Screen N as follows:

(Continued)

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ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 157

G. ENGINEERING REVIEW DETAILS (Cont'd.)

2. SUPPLEMENTAL REVIEW SCREENS (Cont'd.)

a. Screen N: Penetration Test (Cont'd)

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; If voltage is a prevailing constraint, then the full range of smart inverter functions including the volt/var function will be used in power flow analysis for the evaluation of the proposed project. This will reveal if the proposed project causes any voltage impacts of concern. If concerns related to steady state voltage, thermal, or protection exist and the Distribution Provider can identify simple upgrades through power flow analysis (e.g., installation of voltage regulator devices or protection devices to mitigate reduction of reach), then the Distribution Provider will determine the mitigation requirements within Screen N. When larger upgrades or complex protection evaluation is required, Screen N will fail, and the technical evaluation will be conducted under 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, if Applicant elects to proceed.)

(N)
↓
↓
↓
↓
↓
↓
↓
↓
↓
(N)
(T)
(T)

~~Note 1: If none of the above options are available, this screen defaults to Screen M.~~

(D)
(D)

Note 12: The type of Generating Facility technology will be taken into account when calculating, estimating, or determining circuit or Line Section minimum load relevant for the application of this screen. For solar Generating Facilities with no battery storage, daytime minimum load will be used (i.e., 10 am to 4 pm for fixed panel solar Generating Facilities and 8 am to 6 pm for solar Generating Facilities utilizing tracking systems), while absolute minimum load will be used for all

(T)

(Continued)

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other Generating Facility technologies.

(Continued)

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Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

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ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 157

G. ENGINEERING REVIEW DETAILS (Cont'd.)

2. SUPPLEMENTAL REVIEW SCREENS (Cont'd.)

a. Screen N: Penetration Test (Cont'd.)

Note **23**: 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.

(T)

Note **34**: Distribution Provider will not consider as part of the aggregate Generating Facility capacity for purposes of this screen Generating Facility capacity known to be already reflected in the minimum load data.

(T)

Note **45**: 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 WDT Transmission Cluster Study Process, but may be studied under the Independent Study Process.

(T)

Significance: Penetration of Generating Facility capacity 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 Generating Facility capacity on the Line Section, distribution circuit, and/or substation.

i) 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?

ii) Can it be determined within the Supplemental Review that the voltage fluctuation is within acceptable limits as defined by IEEE [1453-1547-2018, 7.2](#) or utility practice similar to [IEEE1453](#) [IEEE 1547-2018, 7.2](#)?

(P)

(P)

(Continued)

**PG&E Gas and Electric
Advice Submittal List
General Order 96-B, Section IV**

AT&T
Albion Power Company

Alta Power Group, LLC
Anderson & Poole

Atlas ReFuel
BART

Barkovich & Yap, Inc.
Braun Blasing Smith Wynne, P.C.
California Cotton Ginners & Growers Assn
California Energy Commission

California Hub for Energy Efficiency
Financing

California Alternative Energy and
Advanced Transportation Financing
Authority
California Public Utilities Commission
Calpine

Cameron-Daniel, P.C.
Casner, Steve
Center for Biological Diversity

Chevron Pipeline and Power
City of Palo Alto

City of San Jose
Clean Power Research
Coast Economic Consulting
Commercial Energy
Crossborder Energy
Crown Road Energy, LLC
Davis Wright Tremaine LLP
Day Carter Murphy

Dept of General Services
Don Pickett & Associates, Inc.
Douglass & Liddell

East Bay Community Energy Ellison
Schneider & Harris LLP
Engineers and Scientists of California

GenOn Energy, Inc.
Goodin, MacBride, Squeri, Schlotz &
Ritchie
Green Power Institute
Hanna & Morton
ICF
International Power Technology

Intertie

Intestate Gas Services, Inc.
Kelly Group
Ken Bohn Consulting
Keyes & Fox LLP
Leviton Manufacturing Co., Inc.

Los Angeles County Integrated
Waste Management Task Force
MRW & Associates
Manatt Phelps Phillips
Marin Energy Authority
McClintock IP
McKenzie & Associates

Modesto Irrigation District
NLine Energy, Inc.
NRG Solar

OnGrid Solar
Pacific Gas and Electric Company
Peninsula Clean Energy

Pioneer Community Energy

Public Advocates Office

Redwood Coast Energy Authority
Regulatory & Cogeneration Service, Inc.
SCD Energy Solutions
San Diego Gas & Electric Company

SPURR
San Francisco Water Power and Sewer
Sempra Utilities

Sierra Telephone Company, Inc.
Southern California Edison Company
Southern California Gas Company
Spark Energy
Sun Light & Power
Sunshine Design
Stoel Rives LLP

Tecogen, Inc.
TerraVerde Renewable Partners
Tiger Natural Gas, Inc.

TransCanada
Utility Cost Management
Utility Power Solutions
Water and Energy Consulting Wellhead
Electric Company
Western Manufactured Housing
Communities Association (WMA)
Yep Energy