

DRAFT

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA
ENERGY DIVISION

I.D. # 10626
RESOLUTION E-4411
September 22, 2011

R E S O L U T I O N

Resolution E-4411. Pacific Gas & Electric Company (PG&E)

PROPOSED OUTCOME: This Resolution approves PG&E's Advice Letter (AL) 3508-E-A with clarifying modification.

ESTIMATED COST: None

By Advice Letter 3508-E-A filed on March 28, 2011

SUMMARY

PG&E proposes to revise Electric Rule 21, Generating Facility Interconnections, Section D to afford more flexibility in determining the requirements for generating facilities interconnecting on PG&E's secondary distribution system. Particularly, the requirement for shared single phase distribution transformer replacement, when interconnecting a generating facility over 20 kVA, is replaced with a project specific determination for transformer replacement after completion of a site specific PG&E engineering analysis. This analysis would employ the same criteria for transformers absent any generating facilities. PG&E also proposes to add the option for generating facilities to measure the voltage for the trip setting times at the generator terminal instead of at the Point of Common Coupling (PCC) which would facilitate generating facilities exporting to a highly loaded circuit.

BACKGROUND

On August 18, 2009 PG&E submitted AL 3508-E proposing two revisions to Electric Rule 21 - Generating Facility Interconnections Section D. First, PG&E proposed to base the requirement for a dedicated distribution transformer, when interconnecting a 20 kilovolt-ampere (kVA) or larger photovoltaic generator, on an engineering evaluation of the existing

transformer's capacity rather than requiring one in all cases. Second, PG&E proposed to clarify voltage requirements consistency with Electric Rule 2, Description of Service.

On September 21, 2009 Keyes & Fox on behalf of the Interstate Renewable Energy Council (IREC) timely protested, arguing that PG&E's proposal would grant PG&E undefined discretion to require dedicated distribution transformers even to interconnect generators smaller than 20 kVA. The IREC protest also questioned whether "inappropriate" operating voltage requirements should continue to be imposed on inverter-based generating facilities.

The Division of Ratepayer Advocates (DRA) also filed a timely protest on September 21, 2009, arguing that PG&E should not impose interconnection requirements that differ from those of other California Investor Owned Utilities (IOUs), Southern California Edison (SCE) and San Diego Gas & Electric (SDG&E), and that the AL process was an improper vehicle for this proposed tariff change, because it did not allow sufficient opportunity for public input. DRA argued that PG&E should instead propose any Rule 21 tariff change within the established Rule 21 Working Group.

On September 28, 2009, PG&E timely responded to the protests. PG&E stated that its proposed tariff change resulted from PG&E's experience that, in some instances, a dedicated transformer is not required for larger (>20 kVA) generating facilities. The PG&E internal standards for distribution transformer sizing take daily load factors, ambient temperatures, ventilation and other factors into account and are used even absent any customer generation. As a result, PG&E argued, any transformer should be evaluated per PG&E's internal standards and practices regardless of customer generating facility size. PG&E argued that its proposed evaluation may help applicants whose facilities happen to exceed the Rule 21-imposed limit (20 kVA) obtain expedited interconnections and CSI incentive payments.

As to the voltage requirement changes, PG&E responded that the proposed changes only make Rule 21's voltage requirements consistent with the voltage requirements that already exist in Rule 2, Description of Service.

In response to IREC's and DRA's protest that Rule 21 should be kept consistent with the other IOUs' tariffs, PG&E stated that it was reviewing the proposed changes with the other IOUs, and that it would welcome the reactivation of the Rule 21 Working Group. As the Rule 21 Working Group was not active at the time of filing, PG&E argued that the AL process was the most efficient means to achieve consensus among stakeholders prior to seeking Commission approval for tariff changes.

On August 31, 2009 Energy Division suspended the AL until January 8, 2010 to serve additional parties and allow PG&E to propose to IREC clarifying language for the guidelines it would use to determine the need for a new distribution transformer, and to communicate such language to the other IOUs.

On January 8, 2010 the AL was suspended for an additional 30 days, until February 8, 2010, in anticipation of PG&E submitting a Supplemental AL upon pending completion of the discussions with IREC and the other IOUs.

On March 28, 2011, PG&E filed Supplemental AL 3508-E-A, which is the subject of this resolution.

NOTICE

Notice of AL 3508-E-A was made by publication in the Commission's Daily Calendar. PG&E states that a copy of the Advice Letter was mailed and distributed in accordance with Section 3.14 of General Order 96-B.

PROTESTS

PG&E's Advice Letter AL 3508-E-A was timely protested by the City of San Diego (CSD) and Jody London Consulting on behalf of Sustainable Conservation (SC) on April 8, 2011.

PG&E timely responded to the protests on April 25, 2011.

DISCUSSION

Energy Division has reviewed PG&E's proposal and CSD's and SC's protests.

1. PG&E's proposal

In the time since submittal of the original AL 3608-E on August 2009, PG&E has worked extensively with SCE and SDG&E to agree on consistent changes to their respective Rule 21 tariffs and understands that each of these IOUs will be filing nearly identical changes to those contained in this AL. SCE meanwhile filed AL 2575-E on April 20, 2011 requesting identical changes to its Rule 21. This AL is suspended pending resolution of the instant AL.

Additionally, PG&E discussed all changes with IREC and the Energy Division and incorporated feedback into the proposed Rule 21 modifications. The proposed change to the tariff language will read as follows, including non-substantive corrections by Substitute Sheets submitted on April 15, 2011:

1.1. Section D.3.d is replaced with new Sections D.1.e. and D.1.f.:

D.1.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 PG&E's analysis determines a transformer change is required, PG&E will furnish the customer with an explanation of why the change is needed.

D.1.f. Generating facilities connected to a single-phase transformer with 120/240 volt 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 PG&E's analysis determines a transformer change is required, PG&E will furnish the customer with an explanation of why the change is needed.

1.2. Section D.2.b.1 is modified to read:

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 PG&E'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.

1.3. Modify Section D.2.b.2 to read:

Generating Facilities (greater than 30 kVA). PG&E 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.

1.4. Modify one entry in Table D.1 Voltage Trip Setting under Section D.2.b.3. to delete the row starting:

“Greater than or equal to 106 Volts but less than or equal to 132 Volts,” as there are no trip times set in this range. In addition, minor formatting changes to the table and the table heading were made.

1.5. Section D.2.i is modified to read:

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 a PG&E 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, PG&E may offer reactive power support in the form of power factor correction capacitors on its distribution system, under a Special Facilities agreement, as described in section E.3.a or Rule as applicable.

1.6. Throughout Rule 21 replaced the term, “Gross Nameplate Rating” with “Gross Rating” and replaced the term “Net Nameplate Rating” with “Net Rating.” Other minor formatting changes were corrected.

2. CSD's protest

- 2.1. CSD protests that it is premature to approve PG&E's proposal because the other two major IOUs have not yet submitted their proposals which could provide additional comments benefitting ED's review of PG&E's proposal.
- 2.2. CSD also protests that the phrase in Section D.1.e: *"Gross Rating 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"* is vague and requests that PG&E clearly explain the process by which the transformer rating may be modified.
- 2.3. CSD further protests that PG&E has not justified the phrase in Section D.2.b.1 that the *"...voltage range at the PCC, with the generator on-line, shall stay within +/-5% of nominal"* and in Section D.2.i the more stringent requirement that the generators *"...maintain the generating facility power factor near unity at rated output or a PG&E specified power factor within a power factor range from 0.9 leading to 0.9 lagging, based on local conditions."* CSD states that PG&E has not provided a cost-benefit analysis for system operation and additional cost to small generating facilities.

3. SC's protest

- 3.1. SC protests that this AL was premature and should be suspended pending resolution of numerous proposals from PG&E affecting Rule 21, among them PG&E's proposed filing to suspend the use of Rule 21 for an undefined "interim period" for any generator that is a Qualifying Facility (QF); PG&E's AL 3830-E, which would revise tariffs and standard contracts for small renewable generators and eligible water and wastewater treatment facilities; and the joint PG&E/SCE/SDG&E application to FERC to suspend going forward the utilities' obligation to purchase electric energy from certain QFs. SC argues that approving this AL without benefit of consideration of all of PG&E's proposals in different jurisdictional venues could prejudice the Commission's effort in those venues.

Last, SC argues that the CPUC's reconvening of the Rule 21 Working Group on April 29, 2011, demonstrates the need for tariff consistency among the IOUs and with state law.

4. PG&E' response to CSD's protest

4.1. PG&E points out that this Supplemental AL resulted from extensive collaboration with SCE and SDG&E and discussions with IREC and the Energy Division to incorporate feedback to the original AL. PG&E further notes that SCE and SDG&E have indicated that they will file nearly identical proposals to modify their respective Rule 21 tariffs, which renders CSD's repetition of the consistency argument unnecessary. PG&E notes that in fact, SCE filed AL 2575-E on April 20, 2011, proposing substantially similar language changes to its Rule 21.

4.2. PG&E explains that the "utility practices" referenced in Section D.1.e refers to PG&E's internal engineering standards and work practices it is employing to determine safe electrical loading levels on its transformers and on the local electrical distribution system.

4.3. PG&E responds to CSD's objection to the "more stringent" voltage and power factor requirements in Section D.2.d.1 and D.2.i by noting that the proposed modification only eliminates reference to an unused voltage trip level and corrects and clarifies the voltage trip setting and power factor language.

5. PG&E's response to SC's protest

5.1. PG&E refers to the response to CSD's protest and adds that SC's protest does not address the specific tariff revisions contained in this filing. PG&E argues that SC's assertion that the changes should not be approved until there is a "better understanding of the entire universe of proposed changes" is groundless. If SC's proposal for delaying a decision on this AL were followed, PG&E argues, customer-generators who are presently waiting to interconnect would not benefit from the more flexible requirements proposed here. Last, PG&E notes that any issues not addressed in this filing could be a subject of a future Rule 21 Working Group meeting.

6. Analysis

- 6.1. We agree with PG&E that a decision should be rendered on this AL without awaiting results from other Rule 21-related activities. Thus, CSD's and CS's request to delay the approval of this AL until all Rule 21 problems regarding interconnections under various tariffs are resolved should be denied.

SCE has meanwhile filed AL 2575-E seeking approval for identical changes to its Rule 21. PG&E's original AL was served on the Rule 21 Working Group roster, which includes stakeholders in all IOU service territories, giving ample opportunity for comments from customer-generators served by each of the IOUs.

The CPUC has re-activated the Rule 21 Working Group, (holding a first workshop on April 29, 2011) and is the proper forum for discussion of interconnection issues under various retail and wholesale tariffs (Net Energy Metering (NEM), Wholesale Distribution Access (WDAT), Feed-in Tariff (FIT), Qualifying Facility (QF), etc). The issues addressed in PG&E's proposal are technical and apply to all generating facilities under Rule 21.

- 6.2. In response to protests to the original AL, PG&E agreed to base its discretion to determine the necessity for a dedicated transformer on its internal engineering standards and work practices used for rating consumption-only transformers. PG&E further agreed to explain the technical reasons on request. We believe justifying the rating of a transformer based on the various parameters (ambient temperature, ventilation, loading, design, location, etc.) is reasonable, even for small generator interconnections. We believe that the proposed language of Sec. D.1.e. appropriately communicates this discretion.
- 6.3. Per Rule 2, Description of Service, PG&E is required to provide service within +/-5% of nominal voltage. This voltage range must therefore be maintained at the PCC when operating a generator so that other customers are not affected. PG&E's proposal does not impose a more stringent requirement and is already specified in Rule 21, Section D.2.a. Table D.1 in Rule 21 shows the trip times for

the voltage range of 106 V to 132 V to minimize nuisance tripping and has not changed.

However PG&E changed the Table D.1 Voltage range column heading to allow measurement at the “Generator Terminal or PCC”. The “Generator Terminal” measurement option leaves uncertainty and may result in a voltage range outside of Rule 2 at the PCC. Furthermore, a Generating Facility may have multiple “Generator Terminals” creating uncertainty as to measurement location.

- 6.4. PG&E discussed the concern noted in 6.3 above with SCE, SDG&E, IREC, and the Commission’s Energy Division and obtained consensus to propose deleting the “Generator Terminal” measurement option to read: “Table D.1: Voltage Trip Settings for Generating Facilities” and to change the heading of the Voltage range columns to: “Voltage at Point of Common Coupling (the Ranges Below Are Used to Trip the Generating Facility During Abnormal Distribution System Conditions”.

Table D.1 footnote stating that for Generating Facilities greater than 30 kVA the trip set points may be “negotiated with PG&E” would be changed to state that different set points than in the table “may be required by PG&E”. The Commission believes that these modifications would clarify the uncertainty and maintain the Rule 2 voltage range at the PCC. These modifications should therefore be filed by PG&E in a Supplement.

- 6.5. The proposed Power Factor requirement is not more restrictive than in the current Section D.2.i. Where the current language requires each generator to be capable of operating within the power factor range of 0.9 leading to 0.9 lagging, PG&E’s proposal only requires the entire Generating Facility to maintain this range. However, further clarification should be added by stating “... from 0.9 leading to 0.9 lagging *at the PCC or point of interconnection*, based ...”

COMMENTS

Public Utilities Code section 311(g)(1) provides that this resolution must be served on all parties and subject to at least 30 days public review and comment prior to a vote of the Commission. Section 311(g)(2) provides that this 30-day period may be reduced or waived upon the stipulation of all parties in the proceeding.

The 30-day comment period for the draft of this resolution was neither waived nor reduced. Accordingly, this draft resolution was mailed to parties for comments, and will be placed on the Commission's agenda no earlier than 30 days from today.

FINDINGS AND CONCLUSIONS

1. PG&E has worked extensively with SCE, SDG&E and IREC to agree on the proposed language changes in Rule 21, Section D.
2. SCE submitted AL 2575-E on April 20, 2011 proposing identical modifications to its Rule 21.
3. IREC did not protest PG&E's Supplemental AL 3508-E-A.
4. PG&E's proposed changes are technical and apply to all customer-generators under PG&E's Rule 21.
5. The reactivated Rule 21 Working Group, led by CPUC, is the proper forum to discuss technical and procedural problems with interconnection.
6. PG&E will use the same internal engineering standards and work practices to determine whether a dedicated transformer is required when a new generating facility requests interconnection as it does for such determinations where no generating facility is present.
7. PG&E will provide its reason for requiring a dedicated transformer upon request by the customer-generator.
8. It is reasonable to determine the need for a dedicated transformer on engineering standards and experience, rather than impose a blanket requirement of installing a dedicated transformer in all cases where a generating facility sized larger than 20 kVA applies for interconnection under Rule 21.
9. Providing a specific set of transformer standards in Rule 21 is beyond the scope of Rule 21.

10. The voltage and power factor ranges required for generator operation are stated within the service requirements of Rule 2, and have the purpose of protecting other customers' service.
11. PG&E's proposal to allow measuring the voltage for the generator trip times in Table D.1 at the "Generator Terminal or PCC" creates uncertainty and may not guarantee the voltage range per Rule 2 at the PCC.
12. To further clarify the power factor requirement, the first sentence of Rule 21, Section D.2.i should state as follows: "...from 0.9 leading to 0.9 lagging *at the PCC or point of interconnection*, based ..."

THEREFORE IT IS ORDERED THAT:

1. PG&E's AL 3508-E-A is approved as submitted with the modifications in OP 2 and 3.
2. In a Tier 1 Advice Letter to be filed within 20 days of the effective date of this resolution, PG&E shall modify Rule 21, Section D., as proposed, but modify the Table D.1 title to: "Table D.1: Voltage Trip Settings for Generating Facilities", and the heading of the Voltage range columns to: "Voltage at Point of Common Coupling (the Ranges Below Are Used to Trip the Generating Facility During Abnormal Distribution System Conditions)".
3. The Advice letter shall further clarify Section D.2.i to amend the first sentence to read: "... from 0.9 leading to 0.9 lagging *at the PCC or point of interconnection*, based ..."

This Resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on September 22, 2011; the following Commissioners voting favorably thereon:

Paul Clanon
Executive Director

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



August 19, 2011

ID# 10626

Draft Resolution E-4411

September 22, 2011 Commission Meeting

TO: PARTIES TO PG&E's ADVICE LETTER 3508-E-A.

Enclosed is draft Resolution E-4411 of the Energy Division addressing Pacific Gas and Electric Company's Advice Letter (AL) 3508-E-A. It will be on the agenda at the September 22, 2011 Commission meeting. The Commission may then vote on this Resolution or it may postpone a vote until later.

When the Commission votes on a draft Resolution, it may adopt all or part of it as written, amend, modify or set it aside and prepare a different Resolution. Only when the Commission acts does the Resolution become binding on the parties.

Parties may submit comments on the draft Resolution no later than Thursday, September 8, 2011.

An original and two copies of the comments, with a certificate of service, should be submitted to:

Honesto Gatchalian/Maria Salinas
Energy Division
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
inj@cpuc.ca.gov; mas@cpuc.ca.gov

A copy of the comments should be submitted to:

Werner Blumer
Energy Division
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
Fax: 415-703-2200
Email: wmb@cpuc.ca.gov

Those submitting comments must serve a copy of their comments on 1) the entire service list attached to the draft Resolution, 2) all Commissioners, and 3) the Director of the Energy Division, on the same date that the comments are submitted to the Energy Division.

Comments may be submitted electronically.

Comments shall be limited to five pages in length plus a subject index listing the recommended changes to the draft Resolution, a table of authorities and an appendix setting forth the proposed findings and ordering paragraphs.

Comments shall focus on factual, legal or technical errors in the proposed draft Resolution. Comments that merely reargue positions taken in the advice letter or protests will be accorded no weight and are not to be submitted.

Replies to comments on the draft resolution may be filed (i.e., received by the Energy Division) on September 15, 2011, 7 days after comments are filed, and shall be limited to identifying misrepresentations of law or fact in the comments of other parties. Replies shall not exceed five pages in length, and shall be filed and served as set forth above for comments.

Late submitted comments or replies will not be considered.

/s/ Julie Fitch
Julie Fitch
Director
Energy Division

1.1 *Enclosure: Certificate of Service*

CERTIFICATE OF SERVICE

I certify that I have by mail this day served a true copy of Draft Resolution E-4411 on all parties in these filings or their attorneys.

Dated August 19, 2011 at San Francisco, California.

/s/ Honesto Gatchalian

Honesto Gatchalian

NOTICE

Parties should notify the Energy Division, Public Utilities Commission, 505 Van Ness Avenue, Room 4002 San Francisco, CA 94102, of any change of address to ensure that they continue to receive documents. You must indicate the Resolution number on the service list on which your name appears.

Service List for Draft Resolution E-4411 (PG&EE AL 3508-E-A)

Jane K. Yura
Vice President, Regulation and Rates
Pacific Gas and Electric Company
77 Beale Street, Mail Code B10B
P.O. Box 770000
San Francisco, CA 94177
PGETariffs@pge.com

Linda Tom-Martinez
Lmt1@pge.com

Frederick M. Ortlieb
Deputy City Attorney
City of San Diego
1200 Third Ave. 11th Floor
San Diego, CA 92101
fortlieb@sandiego.gov

Jody London
Regulatory Consultant to Sustainable Conservation
P.O. Box 3629
Oakland, CA 94609
jody_london_consulting@earthlink.net

Kevin T. Fox
Attorney for the Interstate Renewable Energy Council
5727 Keith Ave
Oakland, CA 94618
kfox@keyesandfox.com

Resolution E-4411
PG&E AL 3508-E-A/wmb

DRAFT

September 22, 2011

Linda Serizawa
Program Manager
Division of Ratepayer Advocates
CPUC
505 Van Ness Ave.
San Francisco, CA 94102
LSS@cpuc.ca.gov