

PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco CA 94102-3298



Pacific Gas & Electric Company
GAS (Corp ID 39)
Status of Advice Letter 4545G
As of April 27, 2022

Subject: Modifications to Gas Rule 29 to Provide Lower and Upper Action Level Specifications for Ammonia, Mercury, and Siloxanes Pursuant to Decision (D.) 20-12-031

Division Assigned: Energy

Date Filed: 12-30-2021

Date to Calendar: 12-31-2021

Authorizing Documents: D2012031

Disposition:	Accepted
Effective Date:	04-13-2022

Resolution Required: No

Resolution Number: None

Commission Meeting Date: None

CPUC Contact Information:

edtariffunit@cpuc.ca.gov

AL Certificate Contact Information:

Stuart Rubio

415-973-4587

PGETariffs@pge.com

PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco CA 94102-3298



To: Energy Company Filing Advice Letter

From: Energy Division PAL Coordinator

Subject: Your Advice Letter Filing

The Energy Division of the California Public Utilities Commission has processed your recent Advice Letter (AL) filing and is returning an AL status certificate for your records.

The AL status certificate indicates:

- Advice Letter Number
- Name of Filer
- CPUC Corporate ID number of Filer
- Subject of Filing
- Date Filed
- Disposition of Filing (Accepted, Rejected, Withdrawn, etc.)
- Effective Date of Filing
- Other Miscellaneous Information (e.g., Resolution, if applicable, etc.)

The Energy Division has made no changes to your copy of the Advice Letter Filing; please review your Advice Letter Filing with the information contained in the AL status certificate, and update your Advice Letter and tariff records accordingly.

All inquiries to the California Public Utilities Commission on the status of your Advice Letter Filing will be answered by Energy Division staff based on the information contained in the Energy Division's PAL database from which the AL status certificate is generated. If you have any questions on this matter please contact the:

Energy Division's Tariff Unit by e-mail to
edtariffunit@cpuc.ca.gov

December 30, 2021

Advice 4545-G

(Pacific Gas and Electric Company U 39 G)

Public Utilities Commission of the State of California

Subject: Modifications to Gas Rule 29 to Provide Lower and Upper Action Level Specifications for Ammonia, Mercury, and Siloxanes Pursuant to Decision (D.) 20-12-031.

Purpose

Pursuant to Ordering Paragraph 11 in (D.) 20-12-031, *Adopting the Standard Renewable Gas Interconnection and Operating Agreement*, Pacific Gas and Electric Company (“PG&E”) hereby submits this Tier 2 Advice Letter to modify Gas Rule 29, Standard Renewable Gas Interconnection, to provide lower and upper action level specifications for ammonia, mercury, and siloxanes in Renewable Gas (RG).¹

Background

On February 13, 2013, Rulemaking (R.) 13-02-008 was opened to implement Assembly Bill (AB) 1900 (Gatto, 2012), which added Health and Safety Code (HSC) § 25421 and requires the California Public Utilities Commission (Commission or CPUC) to take certain actions with respect to biogas and biomethane.

Specifically, HSC § 25421(c) requires the Commission to adopt biomethane standards that specify the concentration of allowable constituents in biomethane injected into a common carrier pipeline. The adoption of the biomethane standards is to ensure the protection of human health, and to ensure pipeline and pipeline facility integrity and safety.

HSC § 25421(a) specifies that the process for creating and updating human health protection biomethane standards starts with the Office of Environmental Health Hazard Assessment (OEHHA), in consultation with the California Air Resources Board (CARB) and other agencies, which shall compile a list of constituents of concern that could pose

¹ PG&E, Southern California Gas Company (SoCalGas), San Diego Gas and Electric Company (SDG&E), and Southwest Gas Corporation (SWG) (collectively, the Joint Utilities) have developed the proposed constituent specifications.

risks to human health and that are found in biogas. This review and update procedure is to take place every five years, or earlier if new information becomes available.

D.14-01-034 adopted the original biomethane standards pursuant to the process established by AB 1900. OP 7 requires the Joint Utilities to file an application with the Commission to formally update biomethane standards within five years from the effective date of the decision. OP 8 states that either OEHHA or CARB can send a letter to the Commission requesting updates to the biomethane standards if they deem it necessary prior to the five-year mark. OP 9 requires the Joint Utilities to specify lower and upper action levels for Integrity Protective Constituents (IPC) ammonia, biologicals, hydrogen, mercury, and siloxanes as part of the process of updating biomethane standards for the first time.

The Joint Utilities requested and received a waiver of their five-year filing obligation by the Commission's Executive Director on December 10, 2018, given that CARB had not published any updated guidance for constituents of concern at that time.

OP 11 of D.20-12-031 states that the Joint Utilities shall provide upper and lower action level specifications in a joint filing to be submitted to the Commission no later than April 1, 2021 for biologicals^{2,3} and January 1, 2022 for ammonia, mercury, and siloxanes. Upper and lower action levels of hydrogen will be established pursuant to Phase 4 of R.13-02-008.

Proposed Lower and Upper Constituent Specifications

PG&E, in conjunction with the Joint Utilities proposes the following Trigger Level, Lower Action Level (LAL), and Upper Action Level (UAL) constituent specifications for ammonia, mercury, and siloxanes as shown in Table 1 below.

² On April 1, 2021, PG&E filed Advice 4413-G to establish lower and upper action levels for biologicals in Gas Rule 29, and the filing was approved by the Commission effective May 1, 2021.

³ Pursuant to direction provided by Energy Division staff on March 19, 2021, the Joint Utilities were instructed to submit separate advice letters instead of a joint submittal. This allows each utility to submit their own tariff sheet modifications, which would not be possible with a joint advice letter submittal.

Table 1

	Current	Proposed	Proposed	Proposed
Constituent	Trigger Level	Trigger Level	Lower Action Level	Upper Action Level
Ammonia	0.001%	0.0004% (3 mg/m ³)	0.001% (7 mg/m ³)	0.0025% (18 mg/m ³)
Mercury	0.08 mg/m ³	0.08 mg/m ³ (No Change Proposed)	TBD	TBD
Siloxane	0.01 mg Si/m ³	0.05 mg Si/m ³	0.1 mg Si/m ³ (No Change Proposed)	0.3 mg Si/m ³

Discussion on Ammonia

Ammonia is a colorless gas with a noxious odor found in nature through the process of anaerobic decay of plant and animal matter. Ammonia may potentially be found in biogas sourced from dairies and other farming operations, wastewater treatment plants, landfills, food waste, and other organic wastes, and when combusted can increase nitrogen oxides (NO_x) emissions from sensitive gas-fired equipment.

Based on findings available in the literature on the impact of ammonia on increasing NO_x emissions on gas-fired equipment,^{4,5} PG&E proposes a LAL of 10 parts per million (ppm_v) or 0.001% (7 mg/m³). This LAL is an industry best practice that would allow PG&E to safely monitor the gas supply and shut-in gas with high ammonia levels that could increase NO_x emissions on gas fired equipment.

PG&E proposes a UAL of 25 ppm_v or 0.0025% (18 mg/m³) to control NO_x emissions.

PG&E is unaware of any research studies that show a negative impact on integrity of pipeline system infrastructure at the LAL or UAL levels recommended above.

⁴ Pollutant Formation during Utilization of Renewable Natural Gas Containing Trace Ammonia Impurities at 19178, available at <https://pubs.acs.org/doi/10.1021/acs.iecr.0c03407>.

⁵ Bay Area Air Quality Management Regulation 9, Rule 6: Nitrogen Oxides Emissions from Natural Gas-Fired Water Heaters-Adopted at page 9-6-3, available at <https://www.baaqmd.gov/rules-and-compliance/rules/reg-9-rule-6-nitrogen-oxides-emissions-from-natural-gas-fired-water-heaters>.

It should be noted that since the proposed LAL is the same as the current Trigger Level, PG&E proposes to reduce the Trigger Level from 0.001% to 0.0004% or 4 ppm_v (3 mg/m³)⁶ based on levels recommended by MarcoGaz⁷, Canadian Gas Association⁸ and used by Fortis BC.

Discussion on Mercury

Mercury in the gas stream has the potential to cause corrosion to metals such as aluminum and copper, depending on exposure time and operating conditions. The Trigger Level of 0.08 mg/m³ implemented by the Joint Utilities in 2014 originated from a literature review and was consistent with professional publications which found that a mercury content of 0.085 mg/m³ is a cause for concern⁹. Efforts by the Joint Utilities to establish an LAL and UAL have resulted in sponsored literature reviews and industry studies, along with data gathering through operational experience with active RG projects.

Industry research is largely limited to the impact of mercury on infrastructure used for cryogenic operations, where liquefied natural gas equipment shows corrosion, such as brazed aluminum heat exchangers, and as a result a cryogenic limit for mercury was established at 10 ng/m³ (or 0.00001 mg/m³ for reference). It is important to note that cryogenic operations are not applicable to the Joint Utilities' service territories in California. Additionally, it is common practice by cryogenic operators to use mercury guard beds to protect equipment integrity from the risks that mercury poses.

The focus of the Joint Utilities is on the effects of mercury on the natural gas pipeline infrastructure and end-user equipment, rather than cryogenic operations. A literature review conducted by the University of Southern California's School of Engineering on Mercury in Natural Gas and Biogas¹⁰ concluded that additional studies are necessary to assess the impact of mercury on non-cryogenic end-user equipment. This literature research sponsored by SoCalGas¹¹ did not identify any specific studies on the effects of mercury or its derivatives in natural gas pipeline systems.

⁶ PG&E recognizes that OP 11 of D.20-12-031 does not specifically authorize revision of the Trigger Level. However, a reduced Trigger Level will permit monitoring of the ammonia concentration prior to the Lower Action Level being reached. If the Commission does not approve the reduced Trigger Level, PG&E requests that the current Trigger Level of 0.001% be retained.

⁷ See https://www.marcogaz.org/wp-content/uploads/2021/04/WG_GQ-187.pdf

⁸ 2018 AGA-EPA Renewable Natural Gas Workshop Presentation at (Slide 6) available at https://www.epa.gov/sites/default/files/2018-11/documents/15_jim_tweedie_-_508.pdf

⁹ From R.13-02-008 (September 5, 2013), at 16. Joint Opening Brief of Southern California Gas Company (U 904 G), San Diego Gas and Electric Company (U 902 G), Pacific Gas and Electric Company (U 39 G), and Southwest Gas Corporation (U 905 G) [Ex. Utilities-3 (Rivera/Raymundo/Frehse) at 10 (referencing American Society for Materials, Corrosion Handbook vol. 13 at 551)].

¹⁰ Literature Review on Mercury in Natural Gas and Biogas in the RD&D Annual Report. available at <https://www.socalgas.com/sustainability/research-and-development>.

¹¹ *Id.*

Recently, the Joint Utilities financially supported an industry study by NYSEARCH (Gap Analysis of Limits of Trace Constituents in RNG)¹² with the intent of having mercury included to substantiate developing a LAL and UAL. However, the researchers did not consider future testing of mercury necessary for the next phase of their study on appliances because the industry already had an established cryogenic limit (10 ng/m³).

SoCalGas has interconnected numerous RG projects and collected operational data from a diverse mix of RG gas supplies, including dairy, wastewater, and other organic sources. Gas quality in these projects has not shown mercury at a concentration exceeding the current Trigger Level, suggesting that mercury concentration at a level that would present an integrity concern is not a likely occurrence for these RG sources. Landfill RG projects, a likely source of mercury, are not currently interconnected to any of the Joint Utilities' gas systems to facilitate gaining operational experience or performing any field tests. Landfill projects are expected to interconnect within the next two to three years. Therefore, PG&E proposes to continue to monitor available literature and gather operational data to support a UAL/LAL recommendation once sufficient information is available.

Discussion on Siloxanes

Siloxanes are often found in industrial and consumer beauty and personal hygiene products, such as cosmetics, cleaning agents and lubricants. Siloxanes may potentially be found in biogas sourced from dairies, wastewater, and landfills.

PG&E proposes no change to the current LAL of 0.1 mg Si/m³ as this limit was re-confirmed by additional testing conducted by NYSEARCH on residential appliances.¹³

PG&E proposes that a UAL of 0.3 mg Si/m³ would sufficiently protect the lifespan of residential customer appliances between test periods, as shown by testing conducted by NYSEARCH.¹⁴ This limit is also supported by the European Committee for Standardization of specifications for biomethane as a fuel for engines (CEN/TC 408).¹⁵

Additionally, PG&E proposes a revised Trigger Level of 0.05 mg Si/m³ based on demonstrated minimum detection level by commercial laboratories and monitors offering this service to RNG producers. The Joint Utilities are awaiting the results of an ASTM Inter-Laboratory study (ILS) conducted by the Gas Technology Institute for the Operations

¹² See https://www.nysearch.org/tech-brief_4_05-2021.php

¹³ NYSEARCH Natural Gas RD&D: Testing of Residential Appliances for Impact of Siloxanes available at: <https://www.nysearch.org/tech-brief-4-siloxane-appliance-impact.php>

¹⁴ *Id.*

¹⁵ CEN/TC 408 – Project Committee – Biomethane For Use in Transport and Injection in Natural Gas Pipelines available at <https://standards.iteh.ai/catalog/tc/cen/4a70e2ba-a169-4c8a-97b2-dc59bc46aa93/cen-tc-408>

Technology Development group ¹⁶ to make future updates in testing standards for precision, repeatability, and reproducibility. The project is in progress and it is expected to be completed by end of next year, 2022.¹⁷

Proposed Tariff Revisions to Gas Rule 29

- Modify Renewable Gas Quality and Specifications Section K.2.a. Table 1 Maximum Constituent Concentrations
 - Ammonia – Trigger Level, LAL and UAL
 - Mercury – No Change
 - Siloxanes – Trigger Level and UAL

Protests

*****Due to the COVID-19 pandemic, PG&E is currently unable to receive protests or comments to this advice letter via U.S. mail or fax. Please submit protests or comments to this advice letter to EDTariffUnit@cpuc.ca.gov and PGETariffs@pge.com*****

Anyone wishing to protest this submittal may do so by letter sent via U.S. mail, facsimile or E-mail, no later than **January 19, 2022**, which is 20 days after the date of this submittal. Protests must be submitted to:

CPUC Energy Division
ED Tariff Unit
505 Van Ness Avenue, 4th Floor
San Francisco, California 94102

Facsimile: (415) 703-2200
E-mail: EDTariffUnit@cpuc.ca.gov

Copies of protests also should be mailed to the attention of the Director, Energy Division, Room 4004, at the address shown above.

¹⁶Operations Technology Development is a member-controlled partnership of gas distribution companies to develop, test, and implement new technologies related to safe and reliable operation of infrastructure.

¹⁷Considering the necessary reviews, statistics, ballots, and publication time for ASTM It is customary for ILS to be completed within 5 years of publishing a new ASTM standard and in this case by 2024.

The protest shall also be sent to PG&E either via E-mail or U.S. mail (and by facsimile, if possible) at the address shown below on the same date it is mailed or delivered to the Commission:

Sidney Bob Dietz II
Director, Regulatory Relations
c/o Megan Lawson
Pacific Gas and Electric Company
77 Beale Street, Mail Code B13U
P.O. Box 770000
San Francisco, California 94177

Facsimile: (415) 973-3582
E-mail: PGETariffs@pge.com

Any person (including individuals, groups, or organizations) may protest or respond to an advice letter (General Order 96-B, Section 7.4). The protest shall contain the following information: specification of the advice letter protested; grounds for the protest; supporting factual information or legal argument; name, telephone number, postal address, and (where appropriate) e-mail address of the protestant; and statement that the protest was sent to the utility no later than the day on which the protest was submitted to the reviewing Industry Division (General Order 96-B, Section 3.11).

Effective Date

Pursuant to General Order (GO) 96-B, Rule 5.1, this advice letter is submitted with a Tier 2 designation in compliance with OP 11 of D.20-12-031. PG&E requests that this advice submittal become effective **January 29, 2022**, which is thirty (30) calendar days after the date submitted.

Notice

In accordance with General Order 96-B, Section IV, a copy of this advice letter is being sent electronically and via U.S. mail to parties shown on the attached list and the service lists for R.13-02-008. 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.13-02-008



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 (U 39 G)

Utility type:

ELC GAS WATER
 PLC HEAT

Contact Person: Stuart Rubio

Phone #: (415) 973-4587

E-mail: PGETariffs@pge.com

E-mail Disposition Notice to: SHR8@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) #: 4545-G

Tier Designation: 2

Subject of AL: Modifications to Gas Rule 29 to Provide Lower and Upper Action Level Specifications for Ammonia, Mercury, and Siloxanes Pursuant to Decision (D.) 20-12-031

Keywords (choose from CPUC listing): Compliance

AL Type: Monthly Quarterly Annual One-Time Other:

If AL submitted in compliance with a Commission order, indicate relevant Decision/Resolution #: D.20-12-031

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: N/A

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: 1/29/22

No. of tariff sheets: 4

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: N/A

¹Discuss in AL if more space is needed.

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

CPUC, Energy Division
Attention: Tariff Unit
505 Van Ness Avenue
San Francisco, CA 94102
Email: EDTariffUnit@cpuc.ca.gov

Name: Sidney Bob Dietz II, c/o Megan Lawson
Title: Director, Regulatory Relations
Utility Name: Pacific Gas and Electric Company
Address: 77 Beale Street, Mail Code B13U
City: San Francisco, CA 94177
State: California Zip: 94177
Telephone (xxx) xxx-xxxx: (415)973-2093
Facsimile (xxx) xxx-xxxx: (415)973-3582
Email: PGETariffs@pge.com

Name:
Title:
Utility Name:
Address:
City:
State: District of Columbia Zip:
Telephone (xxx) xxx-xxxx:
Facsimile (xxx) xxx-xxxx:
Email:

Cal P.U.C. Sheet No.	Title of Sheet	Cancelling Cal P.U.C. Sheet No.
37632-G	GAS RULE 29 RENEWABLE GAS INTERCONNECTIONS TO UTILITY'S PIPELINE SYSTEM Sheet 11	36407-G
37633-G	GAS RULE 29 RENEWABLE GAS INTERCONNECTIONS TO UTILITY'S PIPELINE SYSTEM Sheet 25	37074-G
37634-G	GAS TABLE OF CONTENTS Sheet 1	37454-G
37635-G	GAS TABLE OF CONTENTS Sheet 8	37455-G



GAS RULE 29

Sheet 11

RENEWABLE GAS INTERCONNECTIONS TO UTILITY'S PIPELINE SYSTEM

C. Applicability / Open Access (Cont'd.):

11. Confidentiality

Utility and Interconnector may enter into a confidentiality or non-disclosure agreement using Utility's then-existing standard agreement, as needed to protect the confidential, critical infrastructure, and trade secret information of either party. If the Utility provides any confidential, critical infrastructure, and/or trade secret information to the Interconnector, provision of such information shall require the Interconnector to enter into a confidentiality or non-disclosure agreement using Utility's then-existing standard agreement.

12. Compliance with and Modifications to Established Deadlines

The Utility shall use reasonable efforts to meet all of the timelines provided in this Rule. In the event the Utility is not able to meet a particular timeline, the Utility shall notify the Interconnector as soon as practicable and provide an estimated completion date with an explanation of the reasons why additional time is needed. The Utility and Interconnector shall mutually agree upon a modified timeline. Should mutual agreement not be reached on a modified timeline, the Utility and Interconnector may participate in a dispute resolution process pursuant to Section N of the Rule.

D. Interconnector Request

Interconnector shall complete Utility's interconnect fact sheet and submit a written request for each scope of work: screening, engineering, procurement, and construction as further described herein.

E. Interconnection Screening

(T)

1. Applicability

Any Renewable Gas Interconnector, including an interconnecting pipeline or a supply source, may request one displacement Interconnection Screening for each project, free of charge. Any party may request, on an actual cost basis, an expansion or an additional displacement Interconnection Screening for the project, or a Pipeline Blending Exception Study which entails study of an interconnection to a specific pipeline.

2. Scope of Services

Utility will analyze the impact on its gas system of receiving Interconnector- specified new supply at specified locations.

(Continued)



GAS RULE 29
RENEWABLE GAS INTERCONNECTIONS TO UTILITY'S PIPELINE SYSTEM

K. Renewable Gas Quality and Specifications (Cont'd.):

2. Renewable Gas Constituent Concentrations (Cont'd.):

a. Renewable Gas must conform to the specifications listed in Table 1 and Table 2 (Cont'd.):

Table 1 (Cont'd.) Maximum Constituent Concentrations						
Integrity Protective Constituents (IPC) ³						
Ammonia	0.0004% (3mg/m ³)	0.001% (7mg/m ³) ⁵	0.0025% (18mg/m ³) ⁵	●	●	●
Hydrogen	0.10%	TBD ⁵	TBD ⁵	●	●	●
Mercury	0.08 mg/m ³	TBD ⁵	TBD ⁵	●	●	●
Siloxanes	0.05 mg Si/m ³	0.1 mg Si/m ^{3.5}	0.3 mg Si/m ^{3.5}	●	●	●

Notes:

1. Base Utility Gas Specifications are identified in K1.
2. Health Protective Constituents (HPC) are shown in Table V-3 of the CARB/OEHHA Report.
3. Integrity Protective Constituents are shown in Section 4.4.3.3 of D.14-01-034 and identified as pipeline integrity protective constituents.
4. Other organic sources, includes all Biogas sources other than landfill and dairy manure, including but not limited to, a sewage treatment plant or wastewater plant ("Publicly Owned Treatment Works" or "POTW").
5. The Lower and Upper Action Levels will be reviewed in the next update proceeding.
6. Testing requirement will be the stricter of the stated Renewable Gas values or other tariff requirements.
7. The Interconnector that meets this Rule's Section K.4.b certification requirements shall have reduced siloxanes testing requirements. Utility, at its discretion and at its own cost, may still test pursuant to Utility's applicable tariff rules. If the Utility test results show the siloxanes levels exceed the Lower Action Level, the full siloxanes testing requirements will apply as described in this Rule.

(T)

(T)

(T)

Table 2 Collective Risk from Carcinogenic and Non-Carcinogenic Constituents			
Risk Management Levels	Risk from Carcinogenic Constituents (chances in a million)	Hazard Index from Non-Carcinogenic Constituents	Action
Trigger Level ¹	≥ 1.0	≥ 0.1	Periodic Testing Required
Lower Action Level ²	≥ 10.0	≥ 1.0	Supply shut-in after three exceedances in 12 months in which deliveries occur
Upper Action Level ³	≥ 25.0	≥ 5.0	Immediate supply shut-in

1. Applies to individual Constituent concentrations.
2. Applies to the sum of all Constituent concentrations over the Trigger Level.
3. Applies to individual Constituent concentrations or to the sum of all Constituent concentrations over the Trigger Level.

(Continued)



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Advice 4545-G
Decision 20-12-031

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Submitted December 30, 2021
Effective _____
Resolution _____



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Sheet 8

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Maps, Contracts and Deviations

SERVICE AREA MAPS:

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LIST OF CONTRACTS AND DEVIATIONS:

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Sample Forms

79-1088	Supplemental Agreement For Limited Gas Transmission Capacity	36853-G
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**Sample Forms
Rule 2 Description of Service**

79-1049	Agreement to Install Applicant Requested Common Special Facilities	36852-G
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**Sample Forms
Rule 3 Application for Service**

02-2590	Continuous Service Agreement	36827**-G
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62-3282	Request for Service	36836-G
79-255	Agreement for Installation or Allocation of Special Facilities	36876-G
79-1099	Property Management Authorization Agreement	36859-G
79-1216	Application for New Service or Project.....	37453-G

**Sample Forms
Rule 13 Temporary Service**

79-875	Rule 13 Temporary Service Agreement.....	36892-G
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(Continued)

Advice 4545-G
December 30, 2021

Attachment 2

Redline Tariff Revisions



GAS RULE 29

Sheet 11

RENEWABLE GAS INTERCONNECTIONS TO UTILITY'S PIPELINE SYSTEM

C. Applicability / Open Access (Cont'd.):

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Interconnector shall complete Utility's interconnect fact sheet and submit a written request for each scope of work: screening, engineering, procurement, and construction as further described herein.

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2. Scope of Services

Utility will analyze the impact on its gas system of receiving Interconnector- specified new supply at specified locations.

(Continued)

Advice
Decision

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Submitted
Effective
Resolution



GAS RULE 29
RENEWABLE GAS INTERCONNECTIONS TO UTILITY'S PIPELINE SYSTEM

K. Renewable Gas Quality and Specifications (Cont'd.):

2. Renewable Gas Constituent Concentrations (Cont'd.):

a. Renewable Gas must conform to the specifications listed in Table 1 and Table 2 (Cont'd.):

Table 1 (Cont'd.) Maximum Constituent Concentrations						
Integrity Protective Constituents (IPC) ³						
Ammonia	0.00044% (3mg/m ³)	TBD ⁵ 0.001% (7mg/m ³) ⁵	TBD 0.0025% (18mg/m ³) ⁵	●	●	●
Hydrogen	0.10%	TBD ⁵	TBD ⁵	●	●	●
Mercury	0.08 mg/m ³	TBD ⁵	TBD ⁵	●	●	●
Siloxanes ⁸	0.05 mg Si/m ³ 0.01 mg Si/m ³	0.1 mg Si/m ³	TBD 0.3 mg Si/m ³ ⁵	●	●	●

Notes:

- Base Utility Gas Specifications are identified in K1.
- Health Protective Constituents (HPC) are shown in Table V-3 of the CARB/OEHHA Report.
- Integrity Protective Constituents are shown in Section 4.4.3.3 of D.14-01-034 and identified as pipeline integrity protective constituents.
- Other organic sources, includes all Biogas sources other than landfill and dairy manure, including but not limited to, a sewage treatment plant or wastewater plant ("Publicly Owned Treatment Works" or "POTW").
- The Lower and Upper Action Levels will be ~~reviewed~~ **established** in the next update proceeding.
- Testing requirement will be the stricter of the stated Renewable Gas values or other tariff requirements.
- The Interconnector that meets this Rule's Section K.4.b certification requirements shall have reduced siloxanes testing requirements. Utility, at its discretion and at its own cost, may still test pursuant to Utility's applicable tariff rules. If the Utility test results show the siloxanes levels exceed the Lower Action Level, the full siloxanes testing requirements will apply as described in this Rule.

(T)
(D)
(T)
(T)
(D)

Table 2 Collective Risk from Carcinogenic and Non-Carcinogenic Constituents			
Risk Management Levels	Risk from Carcinogenic Constituents (chances in a million)	Hazard Index from Non-Carcinogenic Constituents	Action
Trigger Level ¹	≥ 1.0	≥ 0.1	Periodic Testing Required
Lower Action Level ²	≥ 10.0	≥ 1.0	Supply shut-in after three exceedances in 12 months in which deliveries occur
Upper Action Level ³	≥ 25.0	≥ 5.0	Immediate supply shut-in

- Applies to individual Constituent concentrations.
- Applies to the sum of all Constituent concentrations over the Trigger Level.
- Applies to individual Constituent concentrations or to the sum of all Constituent concentrations over the Trigger Level.

(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.
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 Energy
Management Service
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
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
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