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**REVISED
PETITION TO AMEND
COLUSA GENERATING STATION**

06-AFC-9C

Submitted to the: California

Energy Commission

Submitted by:

**PACIFIC GAS AND ELECTRIC COMPANY
(PG&E)**

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Section 1 INTRODUCTION

1.1 INTRODUCTION TO PETITION

Pacific Gas & Electric Company (PG&E) files this Petition To Amend (Petition) with the California Energy Commission (Commission) to conform the Air Quality Conditions of Certification to a recent amendment to the Title V Operating Permit issued by the Colusa County Air Pollution Control District (District) for the Colusa Generating Station (CGS). This Petition is filed pursuant to Section 1729 of the Commission Regulations and to comply with Condition of Certification AQ-SC6.

1.2 FINAL DECISION BACKGROUND

On April 23, 2008, the Commission issued a Final Decision to authorize the construction and operation of the CGS¹. On August 14, 2008, PG&E filed a Petition To Amend to reflect final design of the CGS, which was approved by the Commission on July 15, 2009². The approval of the July 15, 2009 Petition To Amend included various modifications to Air Quality Conditions of the Certification. Therefore, the current set of Air Quality Conditions of Certification are contained with the Final Decision and the approval of the July 15, 2009 Petition To Amend.

1.3 PURPOSE AND NEED FOR AMENDMENT

In accordance with existing air quality rules and regulations, the District issued a Title V Operating Permit to the CGS, dated September 1, 2014 (PTO)³. The PTO contains some new administrative conditions and reorganized some existing conditions. PG&E was directed by Commission Staff to file this current Petition to conform the Commission's Air Quality Conditions of Certification to the District PTO.

1.4 INFORMATION NOT KNOWN AT TIME OF FINAL DECISION

The information contained in this Petition could not have been known at the time of the Final Decision because the District issued the PTO several years after the Final Decision.

1.5 MODIFICATIONS DO NOT UNDERMINE FINAL DECISION

The modifications do not change any emission limit but are administrative in nature only. The modifications proposed herein are only to conform the CEC Conditions of Certification to those contained in the PTO as required by Condition of Certification **AQ-**

¹ Final Decision for the Colusa Generating Station, 06-AFC-09, Order 08-0423-03, April 23, 2008.

² Order Approving Petition To Amend, Order 09-715-2, July 15, 2009.

³ Title V Operating Permit, Permit Number 21006-0259, dated September 1, 2014, received by PG&E on October 24, 2014, docketed with the Commission on October 30, 2014, TN 203288.

SC6. Therefore, modifications do not change or undermine any of the assumptions, rationale, findings, or other bases of the Final Decision.

1.6 NO ENVIRONMENTAL IMPACTS

The proposed modifications do not modify any emission standard that was not previously analyzed in the Final Decision or any amendments thereto. Therefore, the modifications are purely administrative in nature and would not result in any new or different environmental impacts.

1.7 COMPLIANCE WITH LORS

The purpose of the Petition is to conform the modified conditions of the PTO with the CEC Conditions of Certification. There are no new laws, ordinances, regulations or standards (LORS) that are applicable to the subject matter of this Petition.

1.8 EFFECT ON PUBLIC

The modifications proposed in this Petition will have no effect on the public as they are administrative in nature and do not result in any new environmental impacts.

1.9 PROPERTY OWNERS

The list of property owners is the same as those used during the original licensing. Since the modifications proposed in this Petition will not result in any new environmental impacts this Petition will have no effects on property owners.

1.10 SCOPE OF ANALYSIS

Pursuant to Section 1769 of the Commission Regulations and Condition of Certification AQ-SC6, this Petition includes a description of each requested modification to the existing Air Quality Conditions of Certification. Since all of the proposed revisions do not involve changes in emissions or operating conditions of the CGS, no environmental analysis is required. Section 2 provides proposed modifications to the Air Quality Conditions or Certification using the convention of **bold underline** for additions and ~~strikethrough~~ for deletions.

Section 2 DESCRIPTION OF MODIFICATIONS

This section provides proposed modifications to the Air Quality Conditions of Certification to conform them to the District PTO. In addition, as requested by Staff, we have included Appendix A which includes all of the Air Quality Conditions of Certification including those proposed for modification.

AQ-4

The District PTO included Permit Condition 10 which addresses upsets and breakdowns and includes more specificity than current Condition of Certification AQ-4. Therefore, we recommend replacement of Condition of Certification AQ-4 with PTO Permit Condition 10 provided below.

AQ-4 Upset/Breakdown Condition

- a. If any upset or breakdown occurs with equipment under permit in such a manner that may cause excess emissions of air contaminants, the APCO shall be notified of such failure or breakdown within twenty-four (24) hours or by 9:00 a.m. by the following working day.
- b. The breakdown shall be logged, investigated and handled to its final disposition.
- c. The project owner⁴ shall also submit a written statement of full disclosure of the upset/breakdown to the District within 72 hours. The report shall contain the date and time of the event and also the following information:
 1. Duration of excessive emissions;
 2. Estimate of quantity of emissions;
 3. Statement of the cause of the occurrence; and
 4. Corrective measures to be taken to prevent a recurrence.
- d. A breakdown condition is an unforeseeable failure or malfunction of any air pollution control equipment or related operating equipment which causes a violation of any emission limitation or restriction prescribed by the District's rules and regulations, or by state law, or similar

⁴ The District uses the convention of referring to the project owner as "PG&E" in its Permit Conditions. We have replaced that term with "project owner" in accordance with Commission practice and to conform to the Conditions of Certification throughout the Final Decision.

failure of any required in stack continuous monitoring equipment.

In the case of shut-down or re-start of air pollution control equipment for necessary scheduled maintenance, the intent to shut down such equipment shall be reported to the Colusa County Air Pollution Control District (District) Air Pollution Control Officer (APCO) at least twenty-four (24) hours prior to the planned shutdown. Such notification does not exempt the facility from complying with all permit limits and requirements.⁵

The verification does not require modification.

AQ-5

The District PTO added additional language to its Permit Condition 5 that requires additional language be added to Condition of Certification AQ-5.

AQ-5 At all times, including periods of startup, shutdown, and malfunction, PG&E shall, to the extent practicable, maintain and operate all fuel burning equipment, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions.⁶

Fugitive emissions, including dust and odors, shall be controlled at all times such that a nuisance is not created at any point beyond the facility's property lines.

Verification: The project owner will document any complaints that it has received from the public in the Quarterly Operation Reports (**AQ-22**). The project owner shall make the site available for inspection by representatives of the District, ARB, and the Energy Commission.

AQ-10

The District PTO included Permit Condition 4, which addresses the quality of natural gas that may be used by CGS. The Final Decision includes Condition of Certification AQ-10 which addresses the same issue. However, PTO Permit Condition 4 includes slightly different language and therefore we propose that Condition of Certification AQ-10 be modified as follows.

⁵ PTO Permit Condition 10.

⁶ PTO Permit Condition 5.

AQ-10 Stationary fuel burning equipment including, ~~t~~The gas turbines, duct burners, and natural gas water bath heater shall be fired exclusively on California Public Utility Commission (CPUC) regulated pipeline quality natural gas.⁷

Verification: The project owner shall submit information on the quality and type of fuel used for the gas turbines, duct burners, and natural gas water bath heater to the CPM and the APCO in the Quarterly Operation Reports (**AQ-22**).

AQ-11

The District PTO includes Permit Condition 16 which addresses the quality of natural gas and is identical to existing Condition of Certification AQ-11 except for removal of a requirement to report gas testing from Burney. Therefore Condition of Certification AQ-11 is modified as follows.

AQ-11 The annual average sulfur content in the natural gas used at the facility shall be less than or equal to 0.3 grains per 100 SCF. Monthly testing, at the site, using approved methods (i.e., EPA 19 and ASTM D-3246) is required to determine the sulfur content of the natural gas. ~~Pacific Gas and Electric natural gas testing data from Burney will be also be reviewed and provided to the District.~~⁸

Verification: The project owner shall compile the required data on the sulfur content of the natural gas and submit the information to the CPM and the APCO in the Quarterly Operation Reports (**AQ-22**).

AQ-13

Condition of Certification AQ-13 requires compliance with the applicable federal standards and test procedures outlined in Subpart KKKK of the federal regulations. The District Permit Conditions 8, 9, 23, 25 and 28 spell out some of those requirements. Therefore we recommend that the District Permit Conditions be added to Condition of Certification AQ-13.

AQ-13 All applicable federal standards and test procedures of Subpart KKKK --Standards of Performance for Stationary Combustion Turbines shall be met.

⁷ PTO Permit Condition 4.

⁸ PTO Permit Condition 16.

The project owner shall not cause to be discharged into the atmosphere from the General Electric gas turbines, any gases which contain nitrogen oxides (NOx) in excess of 15 parts per million by volume (ppmv) when the unit is operating above 75% of peak load and 96 ppmv when operating below 75% of peak load. All concentrations are to be calculated on a 4 hour rolling average and corrected to 15 percent oxygen.⁹

The Project Owner shall not burn in the General Electric gas turbines any fuel which contains total potential sulfur emissions in excess of 0.06 pounds SO₂ per million Btu (lb SO₂/MMBtu) heat input.¹⁰

When conducting the source test required in Condition of Certification AQ-8, Method 20 (or subsequent or approved alternative method) shall be used to determine the nitrogen oxides, and oxygen concentrations. The NOx emissions shall be determined at a point within plus or minus 25 percent of 100 percent of peak load.¹¹

Upon District request, the project owner shall use ASTM D 1072, or alternatively D3246, D4084, D4486, D4810, D6228, D6667, or gas processors association Standard 2377 (or subsequent or approved alternative method) to determine fuel sulfur levels for compliance with the SOx emission limits specified in Conditions of Certification AQ-14, AQ-15, AQ-18, AQ-25, AQ-26, and AQ-27.¹²

The project owner shall submit an excess emissions and monitoring systems performance report and/or a summary report to the District and the EPA semiannually. This report shall contain the information specified in 40 CFR Part 60 Subpart A - General Provisions, Section 60.7(c) and (d) and shall be postmarked by the 30th day following the end of each calendar quarter.¹³

⁹ PTO Permit Condition 8.

¹⁰ PTO Permit Condition 9.

¹¹ PTO Permit Condition 23.

¹² PTO Permit Condition 25.

¹³ PTO Permit Condition 28.

The verification does not require modification.

AQ-19 and 20

The District PTO Permit Conditions 20 and 21 slightly modify the language concerning CEM monitoring and reporting currently contained in Condition of Certification AQ-19 and AQ-20. The modified language is provided below.

AQ-19 Continuous emission monitoring (CEM) systems shall be installed to sample, analyze, and record NO_x, CO, and O₂ concentration in the exhaust gas of both HRSG stacks. This system will generate reports of emissions data in accordance with permit requirements and will send alarm signals to the plant distributed control system (DCS) control room when the level of emissions approaches or exceeds pre-selected limits. ~~Relative accuracy test audits (RATA) shall be conducted annual to verify the performance of the CEM system.~~ **A Relative Accuracy Test Audit (RATA) must be conducted on the CEMS at least once every four calendar quarters, according to the performance specifications for continuous monitoring systems under 40 CFR Part 60, appendix B.**¹⁴

AQ-20 The Colusa County Air District shall have ~~remote~~ **real-time** access to the ~~data logger~~ **CEM data** at the facility to enable District staff to monitor ~~real-time~~ emissions **and compliance with these permit conditions** as recorded by the CEMs. **The format and content of the data display shall be approved by the District.**¹⁵

The verification does not require modification.

AQ-22

The District PTO included Permit Condition 13, which addresses reporting. Existing Condition of Certification AQ-22 also addresses reporting but the new District Permit Condition provides more specificity. Therefore we recommend that Condition of Certification AQ-22 be replaced with the language from PTO Permit Condition 13 as follows.

¹⁴ PTO Permit Condition 21.

¹⁵ PTO Permit Condition 20.

AQ-22 **The project owner shall submit quarterly reports of the facility Continuous emission monitoring (CEM) and process data (including fuel use for each combustion equipment unit), including startup information, to the District within 30 days after the end of each quarter. Format of the data submission will be determined by the District and includes both electronic and hard copy files.**

The monitoring report shall include, at a minimum:

- a. A report for each deviation from permit requirements that occurred during the reporting period, including emergency events. PG&E shall use district approved forms to report each deviation from permit requirement;**
- b. Results of any emission testing done during the reporting period; and**
- c. A Certification Report form (Form 3.17-J1), which includes a certification regarding the truth, accuracy, and completeness of the report from the responsible official.**

An annual report shall also be submitted for the CGS facility including: total emissions for all pollutants for each combustion unit and the entire facility, total operating hours for each combustion unit, numbers and types of startups and shutdowns for each CTG, total fuel used for each combustion unit, results of the monthly sulfur content tests, and total ammonia used. Format of the data submission will be determined by the District and includes both electronic and hard copy files.¹⁶

The verification does not require modification.

AQ-25

The District PTO includes Permit Condition 7 which addresses overall emissions limits for each gas turbine during cold, warm and hot startups and for shutdowns. The CEC Final Decision does not specifically limit emissions during startups and shutdowns. We therefore recommend that the District Permit Condition 7 be added to Condition of Certification AQ-25 as follows:

¹⁶ PTO Permit Condition 13.

The following table shows emission limits for each GE 7FA gas turbine during startup and shutdown operations. Only one gas turbine may be started at a time.¹⁷

<u>Time and Emissions During Startup and Shutdown Operations</u>								
<u>Pollutant</u>	<u>Cold Startup</u>		<u>Warm Startup</u>		<u>Hot Startup</u>		<u>Shutdown</u>	
	<u>270 Minutes</u>		<u>180 Minutes</u>		<u>90 Minutes</u>		<u>30 Minutes</u>	
	<u>Max lb/hour</u>	<u>Total lb/270 min</u>	<u>Max lb/hour</u>	<u>Total lb/180 min</u>	<u>Max lb/hour</u>	<u>Total lb/90 min</u>	<u>Max lb/hour</u>	<u>Total lb/30 min</u>
<u>NO_x</u>	<u>333.3</u>	<u>779.1</u>	<u>249.9</u>	<u>456.2</u>	<u>152.0</u>	<u>259.9</u>	<u>115.0</u>	<u>115.0</u>
<u>CO</u>	<u>429.6</u>	<u>1,355.6</u>	<u>373.6</u>	<u>790.5</u>	<u>370.3</u>	<u>679.6</u>	<u>483.5</u>	<u>483.5</u>
<u>VOC</u>	<u>27.7</u>	<u>106.7</u>	<u>27.7</u>	<u>47.4</u>	<u>27.7</u>	<u>38.0</u>	<u>23.9</u>	<u>23.9</u>
<u>PM₁₀</u>	<u>12.0</u>	<u>48.8</u>	<u>12.0</u>	<u>30.8</u>	<u>12.0</u>	<u>12.8</u>	<u>6.0</u>	<u>6.0</u>
<u>SO₂</u>	<u>0.4</u>	<u>1.8</u>	<u>0.4</u>	<u>1.2</u>	<u>0.4</u>	<u>0.6</u>	<u>0.2</u>	<u>0.2</u>

The verification does not require modification.

NEW PERMIT CONDITIONS

The PTO adds additional conditions that are not completely reflected in the existing Air Quality Conditions of Certification. They are provided here and we recommend that they be included beginning with Condition of Certification AQ-30 (next in order).

AQ-30 Equipment located at the Colusa Generating Station (CGS) facility, including the gas turbines, shall not discharge air contaminants into the atmosphere for a period or periods aggregating more than three (3) minutes in any one hour which is as dark or darker than Ringlemann No. 2 (40% opacity).¹⁸

¹⁷ PTO Permit Condition 7.

¹⁸ PTO Permit Condition 1.

AQ-31 Particulate emissions from fuel burning equipment, including the gas turbines, shall not exceed 0.30 grains per cubic foot of dry gas calculated to 12 percent CO₂ at standard conditions.¹⁹

AQ-32 The emissions of sulfur compounds, calculated as sulfur dioxide (SO₂), from fuel burning equipment, including the gas turbines, shall not exceed 0.2 percent by volume.²⁰

AQ-33 Emergency event

- a. **Within two working days of the emergency event, the project owner shall provide the APCO, via phone, written statement, fax or email the following information:**
 1. **A description of the emergency;**
 2. **Estimated duration of the emergency; and**
 3. **Any mitigating or corrective actions taken.**
- b. **Within two weeks of an emergency event, project owner shall submit to the District a properly signed, contemporaneous log or other relevant evidence which demonstrates that:**
 1. **An emergency occurred;**
 2. **The cause(s) of the emergency can be identified;**
 3. **The facility was being properly operated at the time of the emergency; and**
 4. **All steps were taken to minimize the emissions resulting from the emergency.**
- c. **The APCO shall be notified when the condition causing the emergency event has been corrected and the equipment is again in operation.**
- d. **A report for each emergency event shall be submitted to the APCO as part of project owner's quarterly monitoring report.**
- e. **An emergency event is any situation arising from a sudden and reasonably unforeseeable event beyond the control of project owner which causes the exceedance of a technology-based emission limitation. An emergency event constitutes an affirmative defense to an action brought for**

¹⁹ PTO Permit Condition 2.

²⁰ PTO Permit Condition 3.

non-compliance with technology-based emission limitations if the conditions in 11.b. are met.²¹

AQ-34 The project owner shall report any deviation from permit requirements in these conditions of certification, other than emergency events, to the APCO, via phone, fax or email within 96 hours. A report for each deviation from permit requirement shall be prepared by the project owner within two weeks after the initial detection of the deviation. Unless requested earlier by the APCO, these reports shall be submitted to the APCO as part of the project owner's quarterly monitoring report.²²

AQ-35 The project owner shall submit compliance certification reports to the U.S. EPA and the APCO every twelve months. The report shall be submitted every February 1. PG&E shall use District approved forms for the compliance certification and shall also include a written statement from the responsible official which certifies the truth, accuracy, and completeness of the report.²³

AQ-36 No annual testing requirement is specified for the sulfur dioxide limits specified in Conditions of Certification AQ-25 unless a test is requested by the APCO. All fuel burning equipment at the facility is expected to be in compliance with those limits due to being fired on CPUC regulated natural gas. At the request of the APCO, the project owner shall provide results of testing done to determine the sulfur content of the natural gas used as fuel at the facility.²⁴

AQ-37 Records of all CEM and support information shall include the following: 1) date, place and time of measurement or monitoring equipment maintenance activity; 2) operating conditions at the time of measurement or monitoring equipment maintenance activity; 3) date, place, name of company or entity that performed the measurement or monitoring equipment maintenance activity and the methods used; and 4) results of the measurement or monitoring

²¹ PTO Permit Condition 11.

²² PTO Permit Condition 12.

²³ PTO Permit Condition 14.

²⁴ PTO Permit Condition 17.

equipment maintenance. The CEM and support information shall be retained for at least five years from date of collection of the measurements.²⁵

AQ-38The annual emission limits specified in Condition AQ-26 shall be based on a 12-month rolling average. The daily emission limits specified in condition AQ-25. shall be based on a 24-hour rolling average.²⁶

AQ-39Compliance with the NO_x, CO, VOC and PM₁₀ emission limits specified in Conditions of Certification AQ-14, AQ-15, AQ-16 AQ-17, AQ-25 and AQ-26 shall be determined based on emissions source tests and the CEMs system.²⁷

AQ-40When conducting the source test required in Conditions of Certification AQ-7 and AQ-8, Method 20 (or subsequent or approved alternative method) shall be used to determine the nitrogen oxides, and oxygen concentrations. The NO_x emissions shall be determined at a point within plus or minus 25 percent of 100 percent of peak load.²⁸

AQ-41The zero (or low-level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts for the continuous monitoring system shall be checked at least once daily. The zero and span must, as a minimum, be adjusted whenever either the 24-hour zero drift or 24-hour span drift exceeds two times the limits of the applicable performance specifications in Appendix B of part 60 of Title 40 of the Code of Federal Regulations. The system must allow the amount of excess zero and span to be recorded and quantified whenever specified.²⁹

²⁵ PTO Permit Condition 18.

²⁶ PTO Permit Condition 19.

²⁷ PTO Permit Condition 22.

²⁸ PTO Permit Condition 23.

²⁹ PTO Permit Condition 24.

AQ-42 Except for CEM system breakdowns, repairs, calibration checks, and zero and span adjustments, the continuous monitoring system shall be in continuous operation and shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.³⁰

AQ-43 The CEM shall reduce all data to 1-hour averages which shall be computed from four or more data points equally spaced over each 1-hour period. Data recorded during periods of CEM breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages.³¹

AQ-44 The project owner shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the General Electric gas turbines; any malfunction of the air pollution control equipment; or any periods during which the continuous monitoring system is inoperative.³²

AQ-45 The project owner shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; and adjustments and maintenance performed on these systems or devices recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records.³³

³⁰ PTO Permit Condition 26.

³¹ PTO Permit Condition 27.

³² PTO Permit Condition 29.

³³ PTO Permit Condition 30.