

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
 SACRAMENTO, CA 95814-5512
 www.energy.ca.gov



**STATE OF CALIFORNIA
 ENERGY RESOURCES CONSERVATION
 AND DEVELOPMENT COMMISSION**

In the Matter of:)	
COLUSA GENERATING STATION)	Docket No. 06-AFC-9C
)	Order No.
PG&E)	ORDER APPROVING a Petition to Amend
)	to Revise Air Quality Conditions of
)	Certification
)	

On July 27, 2015, Pacific Gas and Electric Company (PG&E) filed a petition with the California Energy Commission (Energy Commission) requesting to amend the Final Decision for the Colusa Generating Station (CGS). The modifications proposed in the petition would make consistent the Energy Commission Air Quality Conditions of Certification and the conditions contained in the Federal Title V Operating Permit issued by the Colusa County Air Pollution Control District (District) on September 1, 2014. This Title V Permit contained new administrative requirements and a reorganized condition structure.

The combined-cycle, natural gas-fired, air-cooled, 660-megawatt electricity-generating facility was certified by the Energy Commission in its Decision on April 23, 2008, and began commercial operation on December 22, 2010. The facility is located in an unincorporated area of Colusa County, California, approximately 6 miles north of the community of Maxwell, 4 miles west of Interstate 5.

STAFF RECOMMENDATION

Energy Commission staff reviewed the petition and determined that it complies with the requirements of Title 20, California Code of Regulations, section 1769 (a) and recommends approval of PG&E's petition to modify the Colusa Generating Station and amend related Conditions of Certification **AQ-4, AQ-5, AQ-10, AQ-11, AQ-13, AQ-19, AQ-20, AQ-22, and AQ-25**. Staff also recommends the inclusion of new Conditions of Certification **AQ-30 through AQ-45** that were not in the original decision but were included in the new operating permit.

ENERGY COMMISSION FINDINGS

Based on staff's analysis, the Energy Commission finds that the proposed modification will not result in any significant impacts to public health and safety, or to the environment. The Energy Commission finds that:

- The proposed modifications would not change the findings in the Energy Commission's Final Decision pursuant to Title 20, California Code of Regulations, section 1755;
- There would be no new or additional unmitigated, significant environmental impacts associated with the proposed modifications;
- The facility would remain in compliance with all applicable laws, ordinances, regulations, and standards;
- The modifications proposed in the petition would not cause an increase or other undue negative consequence on air quality;
- The proposed modifications would be beneficial to the public, because the facility would be able to continue operating in normal fashion with no significant change, as part of the state's gas-fired fleet; and
- The proposed modifications are justified because there has been a substantial change in circumstances since the Energy Commission certification, in that the District issued a new Title V operating permit with modified conditions.

CONCLUSION AND ORDER

The California Energy Commission hereby adopts staff's recommendations and approves the following changes to the Commission Decision for the Colusa Generating Station. New language is shown as **bold and underlined**, and deleted language is shown in ~~strikethrough~~.

CONDITIONS OF CERTIFICATION

~~AQ-4 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 24 hours or by 9:00 a.m. by the following working day. The person responsible 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, time, duration, estimated emissions, cause, and remedy.~~**Upset/Breakdown Condition**

- 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.**
- The breakdown shall be logged, investigated and handled to its final disposition.**
- The project owner 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 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.

Verification: The project owner shall comply with the notification requirements of the District and submit written copies of these notification reports to the CPM along with the District (AQ-22).

AQ-5 At all times, including periods of startup, shutdown, and malfunction, project owner 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. 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 Stationary fuel burning equipment including, tThe 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.

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 annual average sulfur content in the natural gas used at the facility shall be less than or equal to 0.3 grains per 100 standard cubic feet (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.~~

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

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.

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.

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 NO_x emissions shall be determined at a point within plus or minus 25 percent of 100 percent of peak load.

Upon Energy Commission and 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 SO_x emission limits specified in Conditions of Certification AQ-14, AQ-15, AQ-18, AQ-25, AQ-26, and AQ-27.

The project owner shall submit an excess emissions and monitoring systems performance report and/or a summary report to the Energy Commission, District and the EPA semiannually. This report shall contain the information specified in 40 CFR 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.

Verification: The project owner shall provide copies of all correspondence with U.S.EPA regarding compliance with Subpart KKKK provisions to the District and CPM

in the Quarterly Operation Reports (**AQ-22**), and shall integrate required testing procedures into the facility source testing plan (**AQ-8**).

AQ-19 Continuous emission monitoring systems (CEMS) 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 60 Appendix B to Part 60.**

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, and the Energy Commission to verify the continuous monitoring system is properly installed and operational. Emissions data generated by the CEMS system shall be submitted to the CPM and APCO as part of the Quarterly Operation Reports (**AQ-22**). The RATA test results shall be provided along with the annual source test report as required under **AQ-8**.

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

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, and the Energy Commission to confirm remote access to CEMS data is accessible remotely by Colusa County Air Pollution Control District.

AQ-22 ~~Quarterly reports of CEM and process data, including startup information, shall be submitted to the District within 30 days after the end of each quarter. Format of the data submission will be determined by the District and may include both electronic spreadsheet and hard copy files.~~ **The project owner shall submit quarterly reports of the facility CEMS 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. Project**

owner 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.

Verification: The project owner shall submit to the CPM and APCO the CEMS audits demonstrating compliance with this condition in Quarterly Operation Reports in **AQ-22** and for the annual report to be submitted as part of the 4th Quarter Operation Report.

AQ-25 The total emissions from the CTGs and HRSGs shall not exceed those established below for hourly and daily operations.

Maximum Emissions Both Turbines (lbs)		
Pollutant	1-Hour Emissions	24-Hour Emissions
NO _x	666.60	2,994.60
CO	967.00	7,659.00
VOC	55.40	630.60
PM ₁₀	27.00	648.00
SO ₂	14.80	355.20

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.

Time and Emissions During Startup and Shutdown Operations								
Pollutant	Cold Startup		Warm Startup		Hot Startup		Shutdown	
	270 Minutes		180 Minutes		90 Minutes		30 Minutes	
	Max lb/hour	Total lb/270 min	Max lb/hour	Total lb/180 min	Max lb/hour	Total lb/90 min	Max lb/hour	Total lb/30 min
NO _x	333.3	779.1	249.9	456.2	152.0	259.9	115.0	115.0
CO	429.6	1,355.6	373.6	790.5	370.3	679.6	483.5	483.5
VOC	27.7	106.7	27.7	47.4	27.7	38.0	23.9	23.9
PM ₁₀	12.0	48.8	12.0	30.8	12.0	12.8	6.0	6.0
SO ₂	0.4	1.8	0.4	1.2	0.4	0.6	0.2	0.2

Verification: The project owner shall submit to the CPM and APCO CTG and HRSG emissions data demonstrating compliance with this condition as part of the Quarterly Operation Reports (AQ-22).

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).

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, and the Energy Commission.

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.

Verification: Compliance with AQ-10 and AQ-30 demonstrates compliance with this condition, no other verification necessary.

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.

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-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 CPM and 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 and CPM 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 and CPM 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 non-compliance with technology-based emission limitations if the conditions in AQ-33b are met.

Verification: The project owner shall comply with the notification requirements of the District and submit written copies of these notification reports to the CPM and the APCO as part of the Quarterly Operation Reports (AQ-22).

AQ-34 The project owner shall report any deviation from permit requirements in these conditions of certification, other than emergency events, to the APCO and CPM, 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.

Verification: The project owner shall comply with the notification requirements of the District and submit written copies of these notification reports to the CPM and the APCO as part of the Quarterly Operation Reports (AQ-22).

AQ-35 The project owner shall submit compliance certification reports to the CPM, U.S. EPA and the APCO every twelve months. The report shall be submitted every February 1. The project owner 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.

Verification: The project owner shall comply with the notification requirements of the District and submit written copies of these notification reports to the CPM and the APCO as part of the 4th Quarter Operations Report of AQ-22.

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.

Verification: The project owner shall comply with the notification requirements of the District and submit written copies of these notification reports to the CPM when testing is requested by the APCO.

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

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

AQ-38 The 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.

Verification: The project owner shall submit to the CPM and APCO plant emissions data demonstrating compliance with this condition as part of the Quarterly Operation Reports (AQ-22).

AQ-39 Compliance 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.

Verification: The project owner shall submit to the CPM and APCO plant emissions data demonstrating compliance with this condition as part of the Quarterly Operation Reports (AQ-22).

AQ-40 When 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.

Verification: The project owner shall provide a source test plan to the CPM and District for approval 45 days prior to testing. The project owner shall notify the CPM and the District 10 days prior to any compliance source test.

AQ-41 The 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 40 CFR 60 Appendix B to Part 60 of the Code of Federal Regulations. The system must allow the amount of excess zero and span to be recorded and quantified whenever specified.

Verification: The project owner shall make the site available to representatives of the District, ARB, and the Energy Commission for inspection, including any records required to be maintained in connection with the emissions sources.

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.

Verification: The project owner shall make the site available to representatives of the District, ARB, and the Energy Commission for inspection, including securing samples of emissions or any records required to be maintained in connection with the emissions sources.

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.

Verification: The project owner shall make the site available to representatives of the District, ARB, and the Energy Commission for inspection, including securing samples of emissions or any records required to be maintained in connection with the emissions sources.

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.¹

¹ Title V Permit to Operate Condition 29.

Verification: The project owner shall make the site available to representatives of the District, ARB, and the Energy Commission for inspection, including securing samples of emissions or any records required to be maintained in connection with the emissions sources.

AQ-45 The project owner shall maintain a file of all measurements, including CEMS, monitoring device, and performance testing measurements; all CEMS performance evaluations; all CEMS 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 five years following the date of such measurements, maintenance, reports, and records.

Verification: All files shall be retained for at least five years following the date of such measurements, maintenance, reports, and records. The project owner shall make the site available for inspection by representatives of the District, ARB, and the Energy Commission.

IT IS SO ORDERED.

CERTIFICATION

The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of an Order duly and regularly adopted at a meeting of the California Energy Commission held on **December 9, 2015**.

AYE:

NAY:

ABSENT:

ABSTAIN:

_____,
Secretariat