

CALIFORNIA ENERGY COMMISSION1516 NINTH STREET
SACRAMENTO, CA 95814-5512

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

DOCKET**06-AFC-9C**

DATE JUL 15 2009

RECD JUL 16 2009

In the Matter of:

COLUSA GENERATING STATION) **Docket No. 06-AFC-9C**
)
PACIFIC GAS AND ELECTRIC CO.) **Order No. 09-715-2**
) **ORDER APPROVING** a Petition to Amend
) the Colusa Generating Station License

On August 14, 2008, Pacific Gas and Electric Company (PG&E), the owner/operator of the Colusa Generating Station Project, submitted a petition requesting to modify the general equipment arrangement, eliminate the diesel emergency generator, replace the diesel fire pump with an electric fire pump, eliminate the auxiliary boiler, relocate the natural gas metering station, incorporate a natural gas water bath heater system and add a wet surface air cooler.

STAFF RECOMMENDATION

Energy Commission staff reviewed the petition and finds that it complies with the requirements of Title 20, Section 1769(a) of the California Code of Regulations and recommends approval of PG&E's petition to modify the Colusa Generating Station Project and amend related Conditions of Certification.

ENERGY COMMISSION FINDINGS

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

- The petition meets all the filing criteria of Title 20, section 1769(a) of the California Code of Regulations concerning post-certification project modifications;
- The modification will not change the findings in the Energy Commission's Final Decision pursuant to Title 20, section 1755;
- The project will remain in compliance with all applicable laws, ordinances, regulations, and standards, subject to the provisions of Public Resources Code section 25525;
- The Change will be beneficial to the project owner, in that the overall construction and operation costs would be reduced; and
- This change is based on information that was not available to the parties prior to Energy Commission certification in that PG&E had not yet performed the detailed design engineering until after the license had been issued by the Energy Commission.

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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 Project. New language is shown as **bold and underlined**, and deleted language is shown in ~~strikeout~~.

CONDITIONS OF CERTIFICATION

AQ-SC7 The project shall surrender the emission offset credits listed in Appendix A or a modified list, as allowed by this condition, at the time and in the quantities required by condition **AQ-27** and herein. The project owner may request CPM approval for any substitutions or modification of credits listed in Appendix A. The CPM, in consultation with the District, may approve any such change to the ERC list provided that the project remains in compliance with all applicable laws, ordinances, regulations, and standards; the requested change(s) clearly will not cause the project to result in a significant environmental impact; and each requested change is consistent with applicable federal and state laws and regulations. In addition to the offset requirements of stipulated in **AQ-27**, the applicant will provide sufficient VOC and SO₂ ERCs to mitigate the VOC and SO₂ emissions on a 1:1 basis annually; ~~which will require the applicant to obtain 731.6 pounds of additional SO₂ ERCs prior to initiation of construction.~~

Revisions to the offset package that require review and approval by the CPM include revisions in the amount of stationary source ERCs that are stipulated to be surrendered, where as currently stipulated all stationary source ERCs for NO_x, PM₁₀ and SO₂ as listed in Appendix A will be surrendered and all VOC ERCs needed to offset the project will come from the listed stationary source VOC ERCs. Additionally, any increase in the amount of VOC for NO_x interpollutant offsets must be approved with an updated interpollutant offset ratio analysis.

Verification: ~~The project owner shall provide a record of the required additional SO₂ ERC source(s) prior to initiation of construction.~~ The project owner shall submit to the CPM a list of the ERC certificates and quantities surrendered to the District within 30 days of their surrender. The project owner shall request any changes to the ERC certificates to be surrendered at least 60 days prior to their surrender date as required in condition **AQ-27**. If the CPM, in consultation with the District, approves a substitution or modification, the CPM shall file a statement of the approval with the commission docket and mail a copy of the statement to every person on the post-certification mailing list. The CPM shall maintain an updated list of approved ERCs for the project.

AQ-SC10 The wet surface air cooler shall have a mist eliminator with a manufacturer guaranteed mist reduction rate of 0.005% or less of the water recirculation rate.

Verification: The project owner shall provide the CPM a copy of the manufacturer guarantee for the mist eliminator 30 days prior to installation of the wet surface air cooler.

AQ-SC11 The wet surface air cooler spray water shall be tested for total dissolved solids and that data shall be used to determine and report the particulate matter emissions from

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the wet surface air cooler. The wet surface air cooler spray water shall be tested at least once annually during the anticipated summer operation peak period (July through September).

Verification: The project owner shall provide the water quality test results and the wet surface air cooler particulate (PM10/PM2.5) emissions estimates to the CPM as part of the fourth quarter's quarterly operational report (AQ-SC9).

DISTRICT CONDITIONS

Additionally, staff recommends adopting the revised Colusa County Air Pollution Control District's conditions of certification (COC 2009) as shown below. District conditions not shown below are recommended to remain unchanged.

Verification: **AQ-8** Stack gas testing, using EPA, ARB, or other APCO approved methods shall be required on an annual basis for NOx, VOC, and CO on the HRSG stacks ~~and the auxiliary boiler stack~~. The HRSG stacks ~~and the auxiliary boiler stack~~ shall also be tested for SOx and PM10 emissions during the first year and if requested by the APCO, in subsequent years. The ~~natural gas water bath heater emergency generator and firewater pump engines~~ shall be tested for NOx, SOx, VOC, CO, and PM10 during the first year and thereafter only as requested by the APCO. The results and field data collected during source tests shall be submitted to the CPM and the District within 60 days of testing.

AQ-10 The gas turbines, duct burners, and ~~natural gas water bath heater auxiliary boiler~~ shall be fired exclusively on 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 auxiliary boiler~~ to the CPM and the APCO in the Quarterly Operation Reports (**AQ-22**).

AQ-12 The sulfur content limit in diesel fuel used in the construction equipment ~~and emergency generator and firewater pump engines~~ shall be no more than 15 ppm. ~~Emissions from the two stationary engines mentioned above shall not exceed Ringelmann 0.5 or 10 percent opacity for an aggregate of three minutes in a one-hour period.~~

Verification: The project owner shall compile and submit the required data on the sulfur content of the diesel fuel as required in staff condition AQ-SC5 ~~and emissions from the emergency generator and firewater pump engines~~ and submit the information to the CPM and the APCO ~~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-17 The ~~auxiliary boiler~~ natural gas water bath heater shall have a low NOx burner and shall meet a NOx limit of ~~15.0~~ 30.0 ppmvd @ 3% O₂ averaged over one hour.

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Verification: The project owner shall submit to the CPM and APCO natural gas water bath heater~~auxiliary boiler~~ source test emissions data demonstrating compliance with this condition as required in condition **AQ-8** and shall provide confirmation of normal operations of the heater~~boiler~~ as part of the Quarterly Operation Reports (**AQ-22**).

AQ-23 The emissions from the natural gas water bath heater~~emergency generator and firewater pump engines~~ shall not exceed the hourly limits established in the table below. ~~Total annual operating hours shall not exceed 50 per engine. Testing of these two engines shall not be allowed during gas turbine commissioning and facility startup operations. The generator and firewater pump engines must comply with the Tier rating emissions for their model years.~~

One-Hour Maximum Emissions (lbs)			
Source	Bath Heater	Generator	Fire Pump
NOx	0.39	13.88	1.98
CO	0.79	0.32	1.72
VOC	0.03	0.15	Incl. in NOx
PM10	0.03	0.09	0.10
SO ₂	0.03	0.01	<0.01

Verification: The project owner shall submit to the CPM and APCO for approval the natural gas water bath heater~~emergency generator and firewater pump~~ selected manufacturer emissions data ~~and engines specifications~~ demonstrating compliance with this condition at least 30 days prior to installation. ~~The project owner shall provide 12 month rolling engine operating hours data to show compliance with the operating hours restriction limits in this condition as part of the Quarterly Operation Reports (AQ-22).~~

AQ-24 Deleted. ~~The emission rates from the auxiliary boiler shall not exceed the hourly limits established in the table below. The boiler shall not operate more than 3,744 hours per year.~~

One-Hour Maximum Emissions (lbs)	
Source	Auxiliary Boiler
NOx	0.79
CO	1.61
VOC	0.18
PM10	0.33
SO ₂	0.13

Verification: The project owner shall submit to the CPM and APCO for approval the auxiliary boiler~~selected manufacturer emissions data and specifications~~ demonstrating compliance with this condition and condition **AQ-17** at least 30 days prior to installation. ~~The project owner shall submit to the CPM and APCO auxiliary boiler source test emissions data required under condition **AQ-8** demonstrating compliance with the emission limits for the pollutants included in the source test.~~

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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
NOx	666.60	2,994.60
CO	967.00	7,659.00
VOC	55.40	630.60
PM10	<u>27.00</u> 40.20	<u>648.00</u> 964.80
SO ₂	14.80	355.20

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-26 The total emissions from the Colusa Power Plant shall not exceed the limits established below.

Quarterly and Annual Estimated Combustion Emissions from CGS Facility					
Pollutant	1st Quarter Emissions (tons)	2nd Quarter Emissions (tons)	3rd Quarter Emissions (tons)	4th Quarter Emissions (tons)	Annual Emissions (tons)
NOx	<u>45.56</u> 45.60	<u>43.58</u> 43.62	<u>51.30</u> 51.34	<u>44.27</u> 44.31	<u>184.70</u> 184.87
CO	<u>54.29</u> 54.20	<u>52.49</u> 52.40	<u>107.15</u> 107.06	<u>53.95</u> 53.86	<u>267.89</u> 267.52
VOCs	<u>12.30</u> 12.36	<u>11.63</u> 11.69	<u>11.84</u> 11.90	<u>11.76</u> 11.82	<u>47.54</u> 47.77
PM10	<u>25.54</u> 35.29	<u>25.78</u> 35.39	<u>26.02</u> 35.70	<u>26.02</u> 35.69	<u>103.36</u> 142.08
SO ₂	<u>4.07</u> 4.05	<u>3.85</u> 3.83	<u>3.89</u> 3.87	<u>3.89</u> 3.87	<u>15.69</u> 15.62

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-27 Offsets for the Colusa Generating Station power plant shall be in effect prior to operation of the facility and will not be less than the following amounts at any time. The offsets presented in the first table below do not reflect distance factors adjustments, and the 1.4:1 VOC:NOx interpollutant ratio, nor the 25 tons per year emission allowance. No less than 5.08 tons of PM10 ERCs per quarter shall~~All ERCs for PM10 will~~ be provided prior to start of construction activities to offset construction PM10 emissions.

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Emission Offsets by Calendar Quarter (not adjusted)					
Pollutant in tons	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
Oxides of nitrogen (NO ₂)	<u>36.79</u> <u>50.7</u>	<u>35.41</u> <u>47.0</u>	<u>31.36</u> <u>36.5</u>	<u>37.93</u> <u>53.8</u>	<u>141.49</u>
Volatile organic compounds	<u>39.89</u> <u>12.3</u>	<u>39.89</u> <u>11.6</u>	<u>39.89</u> <u>11.9</u>	<u>39.89</u> <u>11.8</u>	<u>159.56</u>
Particulate Matter PM10	<u>30.43</u> <u>32.5</u>	<u>28.33</u> <u>30.7</u>	<u>22.15</u> <u>24.0</u>	<u>31.75</u> <u>34.7</u>	<u>112.66</u>
Oxides of sulfur (SO ₂)	3.50	2.94	1.39	3.85	

Emission Offsets by Calendar Quarter (adjusted for distance and interpollutant offset ratio)					
Pollutant in tons	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
Oxides of nitrogen (NO ₂)	<u>26.20</u>	<u>47.01</u>	<u>36.55</u>	<u>53.80</u>	<u>99.83</u>
Volatile organic compounds	<u>26.59</u>	<u>26.59</u>	<u>26.59</u>	<u>26.59</u>	<u>106.36</u>
Particulate Matter PM10	<u>21.22</u>	<u>19.73</u>	<u>15.21</u>	<u>22.20</u>	<u>78.36</u>

Verification: At least 30 days prior to commencing construction, the project owner shall surrender PM10 ERC certificates in the amounts to offset the emissions shown above to the District and provide documentation of that surrender to the CPM and APCO. At least 60 days prior to commencing CTG first fire, the project owner shall surrender the remaining ERC certificates to offset the emissions in the amounts shown above and as required in Condition AQ-SC7, to the District and provide documentation of that surrender to the CPM and APCO.

AQ-28 The construction of the facility cannot commence until all construction permits, including the U.S. EPA PSD permit, are obtained. Specified, limited construction activities are allowed prior to issuance of the PSD permit as stated in the USEPA policy document dated December 18, 1978:

Verification: The project owner shall keep proof of the project's District air permit and Energy Commission certification including copies of all permit conditions and conditions of certification on site starting at the commencement of construction through the final decommissioning of the project. The project owner shall make the District's permit conditions and conditions of certification available at the project site to representatives of the District, ARB and the Energy Commission for inspection. The project owner shall provide a copy of the U.S. EPA PSD permit to the CPM once it is available.

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References

CEC (California Energy Commission) 2007. Final Staff Assessment Colusa Generating Station (06-AFC-9). November 2007.

CEC 2008. Final Commission Decision Colusa Generating Station (06-AFC-9). April 2008.

COC (Colusa County Air Pollution Control District) 2009. Revised Authority to Construct Conditions. E-mailed from Les Fife, CCAPCD Consultant, to William Walters, Aspen Environmental Group. March 5, 2009.

PG&E (Pacific Gas & Electric Company) 2008a. Colusa Generating Station (06-AFC-09) Amendment 1. Submitted August 2008.

PG&E (Pacific Gas & Electric Company) 2008b. Colusa Generating Station (06-AFC-09) Data Response Set 1 (1-17). Submitted November 2008.

PG&E (Pacific Gas & Electric Company) 2009a. Colusa Generating Station (06-AFC-09) Data Response Set 2 (18, 19). Submitted January 2009.

PG&E (Pacific Gas & Electric Company) 2009b. Colusa Generating Station (06-AFC-09) Data Response Set 3 (20-24). Submitted February 2009.

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Appendix A
Emissions Reduction Credits

Condition of Certification AQ-SC7
Required Emission Reduction Credits ^a

ERC Certificate Number and Number Reduction Source Location Distance from Project	Pollutant	Total Q1 (lb)	Total Q2 (lb)	Total Q3 (lb)	Total Q4 (lb)	Annual (lbs)
Stationary Source ERCs						
Highway 70 Industrial Park, LP // Oroville, CA // Butte County ^b (Cert. 08-05-36, 08-05-37, 08-05-39) > 20 < 50 miles	NOx	35,000.0	35,000.0	35,000.0	35,000.0	140,000.0
	VOC	87,500.0	87,500.0	87,500.0	87,500.0	350,000.0
	PM10	33,500.0	33,500.0	33,500.0	33,500.0	134,000.0
	SO ₂	0.0	0.0	0.0	0.0	0.0
PGE Credits/Gerber Compressor Station//Gerber, CA//Tehama County (Cert. 01-009) > 20 < 50 miles	NOx	15,995.9	15,995.9	15,995.9	15,995.9	63,983.6
	VOC	0.0	0.0	0.0	0.0	0.0
	PM10	352.2	352.2	352.2	352.2	1,408.8
	SO ₂	18.0	18.0	18.0	18.0	72.0
Jack W. Baber // Sierra Mountain Mills, Camptonville, CA // Yuba County ^c (Cert. ERC-9937006-00T) > 50 miles	NOx	420.0	707.0	641.0	501.0	2,269.0
	VOC	199.0	335.0	304.0	238.0	1,076.0
	PM10	6,034.0	10,156.0	9,218.0	7,201.0	32,609.0
	SO ₂	166.0	279.0	254.0	198.0	897.0
Agricultural Burn Cessation ERCs						
Baber Family Trust // Colusa, CA // Colusa County ^d (Cert. 06-01-02-03) < 20 miles	NOx	1,004.8	810.3	324.1	1,102.0	3,241.2
	VOC	908.1	732.4	292.9	996.0	2,929.4
	PM10	1,217.3	981.7	392.7	1,335.1	3,926.8
	SO ₂	212.5	171.4	68.6	233.1	685.6
Jack W. Baber and Judith S. Baber // Colusa, CA // Colusa County ^d (Cert. 06-01-02-04) < 20 miles	NOx	2,401.8	1,936.9	774.8	2,634.2	7,747.7
	VOC	2,170.8	1,750.7	700.3	2,380.9	7,002.7
	PM10	2,909.8	2,346.6	938.7	3,191.4	9,386.5
	SO ₂	508.1	409.7	163.9	557.2	1,638.9
Estate of Jack W. Baber Jr. // Colusa, CA // Colusa County ^d (Cert. 06-01-02-05) < 20 miles	NOx	848.5	684.3	273.7	930.7	2,737.2
	VOC	767.0	618.5	247.4	841.2	2,474.1
	PM10	1,028.0	829.1	331.6	1,127.5	3,316.2
	SO ₂	179.5	144.8	57.9	196.9	579.1
Pixie E. Baber // Colusa, CA // Colusa County ^d (Cert. 06-01-02-05.2) < 20 miles	NOx	809.0	625.5	261.0	887.3	2,582.8
	VOC	731.2	589.7	235.9	802.0	2,358.8
	PM10	980.2	790.5	316.2	1,075.0	3,161.9
	SO ₂	171.1	138.0	55.2	187.7	552.0
Jack W. Baber and Judith S. Baber // Colusa, CA // Colusa County ^d (Cert. 06-01-02-06) < 20 miles	NOx	587.8	474.1	189.6	644.7	1,896.2
	VOC	531.3	428.5	171.4	582.7	1,713.9
	PM10	712.2	574.3	229.7	781.1	2,297.3
	SO ₂	124.3	100.3	40.1	136.4	401.1

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IT IS SO ORDERED.

Date: 7/15/09

STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

A handwritten signature in black ink, appearing to read 'K. Douglas', written over a horizontal line.

KAREN DOUGLAS
Chairman