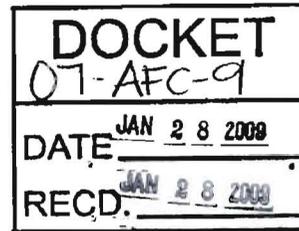


January 28, 2009

Ms. Angela Hockaday  
California Energy Commission  
Docket Unit  
1516 Ninth Street  
Sacramento, CA 95814-5512



Subject:

**APPLICATION FOR THE CANYON POWER PLANT  
DOCKET NO. 07-AFC-09**

Dear Ms. Hockaday:

Enclosed for filing with the California Energy Commission are one (1) original and twelve (12) copies of the following documents, for the Canyon Power Plant Docket No.07-AFC-09:

1. ECM Technology White Paper
2. Letter dated December 16, 2008 to SCAQMD  
Subject: Changes to the Canyon Power Plant Annual Emissions and Dispersion Modeling
3. Letter dated on January 6, 2009 to SCAQMD  
Subject: Change in the Fuel Use and Sox/PM10 Emission Factors Used During Commissioning for the Canyon Power Plant (Facility I.D. 153992)
4. Letter dated on January 23, 2009 to California Energy Commission
5. Letter dated on July 2, 2008  
Subject: May 8, 2008 Letter Regarding the AFC for Canyon Power Plant Project in Anaheim, CA.

Sincerely,



Scott Galati  
Counsel to Canyon Power Plant



City of Anaheim  
**PUBLIC UTILITIES DEPARTMENT**  
Integrated Resources Division

January 6, 2009

Vicky Lee  
Air Quality Engineer  
South Coast AQMD  
21865 Copley Drive  
Diamond Bar, CA 91765

Subject: Change in the Fuel Use and SO<sub>x</sub>/PM<sub>10</sub> Emission Factors Used During  
Commissioning for the Canyon Power Plant (Facility I.D. 153992)

Dear Ms. Lee:

The draft SCAQMD engineering evaluation for the Canyon Power Plant (Facility I.D. Number 153992) includes proposed draft permit conditions for the four gas turbines proposed as part of this facility. Permit Condition Number A63.1 includes SO<sub>x</sub> and PM<sub>10</sub> emission factors of 2.33 lbs/mmscf and 10.91 lbs/mmscf, respectively. These emission factors will be used to track compliance with the monthly SO<sub>x</sub> and PM<sub>10</sub> emission limits during the gas turbine commissioning period. These emission factors were calculated by the SCAQMD based on information provided to the SCAQMD in the September 2008 revised permit application package for the proposed project (see Table 3-5 of this application package). We request that these commissioning emission factors be revised to reflect more reasonable emission levels during the commissioning phase of the proposed project. In addition, we have made some changes to the fuel use levels and VOC emission levels shown in the commissioning summary table to correct some typographical errors in the original table. The following paragraphs discuss these changes in more detail.

The commissioning summary table provided to the SCAQMD in the September 2008 revised permit application included hourly fuel use levels and total fuel use for each commissioning activity. Unfortunately these fuel use levels included a number of typographical errors. In addition, the VOC emission level during commissioning activity number 5 also includes a typographical error. The total VOC emissions during this commissioning activity should be 42 rather than 11 pounds. These errors have been corrected in the enclosed revised summary table (Attachment 3, revised Table 3-5).

The SO<sub>x</sub> emission factor of 2.33 lbs/mmscf was calculated by the SCAQMD based on a total commissioning emission level of 100 lbs and a total fuel use of

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42.9 mmscf shown in the permit application (from Table 3-5 in the permit application). This commissioning SOx emission factor is equivalent to a natural gas total sulfur content of approximately 0.82 gr/100 scf.<sup>a</sup> As shown by the enclosed information from the Southern California Gas Company (see Attachment 1), the tariff limit on the total sulfur content of natural gas supplied by its system is 0.75 gr/100 scf. In addition, based on the information from Southern California Gas Company provided in Attachment 2, the actual maximum total sulfur content of the natural gas that will be provided to the proposed facility is less than approximately 0.2 gr/100 scf, with an average total sulfur content ranging from approximately 0.08 gr/100 scf to 0.19 gr/100 scf.

Consequently, we expect the actual natural gas sulfur content and corresponding actual SOx emission levels during the commissioning period to be significantly less than calculated using a SOx emission factor of 2.33 lbs/mmscf. Therefore, we request that the draft SCAQMD engineering evaluation be revised to reflect a more reasonable SOx emission factor during commissioning. The enclosed commissioning summary table (see Attachment 3, revised Table 3-5) has been revised to account for an expected maximum average natural gas total sulfur content of 0.25 gr/100 scf during the commissioning period. This natural gas sulfur content corresponds to the normal operation SOx emission factor of 0.68 lbs/mmscf shown in the SCAQMD draft engineering evaluation. In the enclosed summary table, for each commissioning activity the SOx emissions were calculated using the normal operation SOx emission factor of 0.68 lbs/mmscf and the corresponding fuel use for each commissioning activity. For example, for commissioning activity number 1, the total fuel use is 2.0371 mmscf. This fuel use results in SOx emissions for this commissioning activity of approximately 1.4 lbs using the emission factor of 0.68 lbs/mmscf.

The PM<sub>10</sub> emission factor of 10.91 lbs/mmscf in the draft engineering evaluation was calculated by the SCAQMD based on a total commissioning emission level of 468 lbs and total fuel use of 42.9 mmscf shown in the permit application (see Table 3-5 of permit application). In the permit application, the PM<sub>10</sub> emissions during commissioning were based on an hourly PM<sub>10</sub> emission rate of 3.0 lbs/hr regardless of the gas turbine operating load. As shown in Table 3-5 of the permit application, the gas turbine operating load during commissioning activities ranges from 5% to 100%. A total of 156 hours of commissioning and a total PM<sub>10</sub> emission level of 468 lbs results in a constant hourly emission rate of 3.0 lbs/hr for all of the commissioning activities. Using this approach, the resulting PM<sub>10</sub> emission factor of 10.91 lbs/mmscf is approximately 45% higher than the normal operating PM<sub>10</sub> emission factor of 6.03 lbs/mmscf.

Because PM<sub>10</sub> emissions during commissioning are not expected to be different than emissions during normal operation and because PM<sub>10</sub> emissions at low gas turbine operating levels are expected to be lower than during high operating loads,

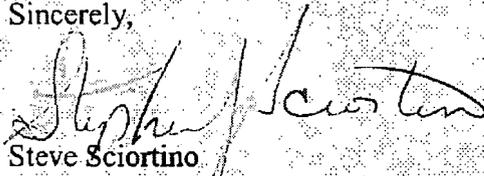
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<sup>a</sup> Calculated as follows: (2.33 lbs SOx/mmscf natural gas) x (mmscf/10<sup>6</sup> scf) x (32 lbs sulfur/64 lbs SOx) x (7000 gr/1 lb) x (100) = 0.8155 gr sulfur/100 scf natural gas

we are requesting that the SCAQMD revise the commissioning PM<sub>10</sub> emission factor to account for these factors. The enclosed commissioning summary table (see Attachment 3, revised Table 3-5) has been revised to account for lower PM<sub>10</sub> emission levels during the low load commissioning activities. This was done by calculating emissions for each commissioning activity using the normal operation PM<sub>10</sub> emission factor of 6.03 lbs/mmscf and the corresponding fuel use for each commissioning activity. For example, for commissioning activity number 1, the total fuel use is 2.0371 mmscf. This fuel use results in PM<sub>10</sub> emissions for this commissioning activity of approximately 12.3 lbs using the emission factor of 6.03 lbs/mmscf.

If you have any questions or need any additional information, please contact Suzanne Wilson at (714) 765-4112.

Sincerely,



Steve Sciortino

Integrated Resources Manager  
City of Anaheim Public Utilities Department

Attachments

**ATTACHMENT 1**

**SOCAL GAS COMPANY TARRIF LIMIT ON NATURAL GAS SULFUR CONTENT**

Rule No. 30

Sheet 13

TRANSPORTATION OF CUSTOMER-OWNED GAS

(Continued)

I. Gas Delivery Specifications (Continued)

2. Gas delivered into the Utility's system for the account of a customer for which there is no existing contract between the delivering pipeline and the Utility shall be at a pressure such that the gas can be integrated into the Utility's system at the point(s) of receipt.
3. Gas delivered, except as defined in I.1 above, shall conform to the following quality specifications at the time of delivery:
  - a. Heating Value: The minimum heating value is nine hundred and ninety (990) Btu (gross) per standard cubic foot on a dry basis. The maximum heating value is one thousand one hundred fifty (1150) Btu (gross) per standard cubic foot on a dry basis.
  - b. Moisture Content or Water Content: For gas delivered at or below a pressure of eight hundred (800) psig, the gas shall have a water content not in excess of seven (7) pounds per million standard cubic feet. For gas delivered at a pressure exceeding of eight hundred (800) psig, the gas shall have a water dew point not exceeding 20 degrees F at delivery pressure.
  - c. Hydrogen Sulfide: The gas shall not contain more than twenty-five hundredths (0.25) of one (1) grain of hydrogen sulfide, measured as hydrogen sulfide, per one hundred (100) standard cubic feet (4 ppm). The gas shall not contain any entrained hydrogen sulfide treatment chemical (solvent) or its by-products in the gas stream.
  - d. Mercaptan Sulfur: The gas shall not contain more than three tenths (0.3) grains of mercaptan sulfur, measured as sulfur, per hundred standard cubic feet (5 ppm).
  - e. Total Sulfur: The gas shall not contain more than seventy-five hundredths (0.75) of a grain of total sulfur compounds, measured as sulfur, per one hundred (100) standard cubic feet (12.6 ppm). This includes COS and CS<sub>2</sub>, hydrogen sulfide, mercaptans and mono, di and poly sulfides.
  - f. Carbon Dioxide: The gas shall not have a total carbon dioxide content in excess of three percent (3%) by volume.
  - g. Oxygen: The gas shall not have an oxygen content in excess of two-tenths of one percent (0.2%) by volume, and customer will make every reasonable effort to keep the gas free of oxygen.
  - h. Inerts: The gas shall not contain in excess of four percent (4%) total inerts (the total combined carbon dioxide, nitrogen, oxygen and any other inert compound) by volume.
  - i. Hydrocarbons: For gas delivered at a pressure of 800 psig or less, the gas hydrocarbon dew point is not to exceed 45 degrees F at 400 psig or at the delivery pressure if the delivery pressure is below 400 psig. For gas delivered at a pressure higher than 800 psig, the gas hydrocarbon dew point is not to exceed 20 degrees F measured at a pressure of 400 psig.

(Continued)

(TO BE INSERTED BY UTILITY)  
ADVICE LETTER NO. 3706-A  
DECISION NO. 06-12-031, 07-06-003  
13C21

ISSUED BY  
**Lee Schavrien**  
Senior Vice President  
Regulatory Affairs

(TO BE INSERTED BY CAL. PUC)  
DATE FILED Sep 17, 2007  
EFFECTIVE Oct 1, 2008  
RESOLUTION NO. G-3407

**ATTACHMENT 2**

**ACTUAL NATURAL GAS SULFUR CONTENT**

*Updated 8/7/07* (grains S/100 cf)

Out of State Suppliers Location	H2S		RSH			Total Sulfur*	
	Max	Avg	Max	Avg	Max	Avg	
First Quarter 2007	Border	0.078	0.011	0.108	0.031	0.162	0.082
	Wheeler/KM	0.076	0.026	0.078	0.005	0.137	0.107
Second Quarter 2007	Border	0.114	0.014	0.120	0.030	0.192	0.192
	Wheeler/KM	0.120	0.028	0.664	0.031	0.197	0.105
Third Quarter 2007	Border						
	Wheeler/KM						
Fourth Quarter 2007	Border						
	Wheeler/KM						

*Updated 8/7/07* (ppmv S)

Out of State Suppliers Location	H2S		RSH			Total Sulfur*	
	Max	Avg	Max	Avg	Max	Avg	
First Quarter 2007	Border	1.31	0.18	1.82	0.52	2.73	1.38
	Wheeler/KM	1.28	0.45	1.31	0.09	2.31	1.80
Second Quarter 2007	Border	1.93	0.23	2.03	0.51	3.24	3.24
	Wheeler/KM	2.03	0.47	11.20	0.52	3.32	1.77
Third Quarter 2007	Border	0.00	0.00	0.00	0.00	0.00	0.00
	Wheeler/KM	0.00	0.00	0.00	0.00	0.00	0.00
Fourth Quarter 2007	Border	0.00	0.00	0.00	0.00	0.00	0.00
	Wheeler/KM	0.00	0.00	0.00	0.00	0.00	0.00

Extracted from Border Station Sulfur Gas Chromatograph daily and hourly averages

H2S: Hydrogen Sulfide

RSH: Total mercaptan sulfur compounds and thiophane

Total Sulfur: DAvG H2S + DAvG RSH + Odorant\*

Assuming 16.9 ppm = 1 grains S/Ccf

\* Includes estimated supplemental odorant based on border guidelines of 50/50 t-butyl mercaptan/thiophane

\*\* SoCalGas Specifications allow up to 0.25 gr. H<sub>2</sub>S/100scf and 0.75 gr. S/100scf Total Sulfur

The enclosed is provided for information purposes only. The Gas Company has made reasonable efforts to ensure all information is correct and consistent with the applicable Tariffs. To the extent there is any conflict with the Tariffs, the Tariffs shall govern in all cases. In addition, neither The Gas Company's publication nor verbal representations thereof constitutes any statement, recommendation, endorsement, approval or guaranty (either express or implied) of any product or service. Moreover, The Gas Company shall not be responsible for errors or omissions in this publication, for claims or damages relating to the use thereof, even if it has been advised of the possibility of such damages.

ATTACHMENT 3

REVISED COMMISSIONING EMISSION SUMMARY TABLE

**Table 3-5 (Revised on 1/05/09)  
 Durations and Criteria Pollutant Emissions for Commissioning of a Single CTG**

Activity	Duration (hours)	% Output at ISO	Fuel Gas Flow Rate (MMCF/hr)	Estimated Total Fuel Usage (MMCF)	Exhaust Temp (°F)	Exhaust Flow Rate (acfm)	Total Pollutant Estimated Emission per Event (lbs)				
							NOx	CO	ROG	PM <sub>10</sub>	SO <sub>2</sub>
1. First fire the unit and then shutdown to check for leaks, etc.	24	CI	<del>0.0833</del> <u>0.0849</u>	<del>1.9032</del> <u>2.0371</u>	694	199,271	200	822	27	<del>72</del> <u>12.3</u>	<del>6</del> <u>1.4</u>
2. Synch and check e-stop	18	SI	<del>0.0833</del> <u>0.0849</u>	<del>1.4355</del> <u>1.5278</u>	694	199,271	150	617	20	<del>54</del> <u>9.2</u>	<del>4</del> <u>1.0</u>
3. Additional automatic voltage regulator (AVR) commissioning	18	5%	<del>0.1031</del> <u>0.1050</u>	<del>1.8065</del> <u>1.8906</u>	726	218,499	261	329	8	<del>54</del> <u>11.4</u>	<del>5</del> <u>1.3</u>
4. Break-in run	12	5%	<del>0.1031</del> <u>0.1050</u>	<del>1.2097</del> <u>1.2604</u>	726	218,499	174	219	5	<del>36</del> <u>7.6</u>	<del>4</del> <u>0.9</u>
5. Dynamic commissioning of AVR and commission water injection and SPRINT	60	10-100%	<del>0.1194</del> <del>0.4559</del> <u>0.1216</u> – <u>0.4644</u>	<del>31.3874</del> <u>17.2168</u>	713 – 843	239,475 – 513,911	1636	819	<del>44</del> <u>42</u>	<del>180</del> <u>103.8</u>	<del>49</del> <u>11.7</u>
6. Base load AVR commissioning	24	100%	<del>0.4559</del> <u>0.4644</u>	<del>5.1613</del> <u>11.1449</u>	843	513,911	1023	409	30	<del>72</del> <u>67.2</u>	<del>32</del> <u>7.6</u>
Total emissions during commissioning	156			<del>42.90</del> <u>35.0777</u>			3443	3213	<del>89</del> <u>131</u>	<del>468</del> <u>211.5</u>	<del>100</del> <u>23.9</u>



BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
COMMISSION OF THE STATE OF CALIFORNIA  
1516 NINTH STREET, SACRAMENTO, CA 95814  
1-800-822-6228 – WWW.ENERGY.CA.GOV

**APPLICATION FOR CERTIFICATION**  
*For the CANYON POWER PLANT  
PROJECT*

Docket No. 07-AFC-9

**PROOF OF SERVICE**  
(REVISED 7/31/2008)

**INSTRUCTIONS:** All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

**CALIFORNIA ENERGY COMMISSION**

Attn: Docket No. 07-AFC-9  
1516 Ninth Street, MS-15  
Sacramento, CA 95814-5512  
[docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)

**APPLICANT**

Southern California Public Power  
Authority (SCPPA)  
c/o City of Anaheim  
Public Utilities Department  
Steve Sciortino, Project Manager  
201 S. Anaheim Blvd, Suite 802  
Anaheim, CA 92805  
[ssciortino@anaheim.net](mailto:ssciortino@anaheim.net)  
[swilson@anaheim.net](mailto:swilson@anaheim.net)

**APPLICANT CONSULTANT**

URS Corporation  
Cindy Poire, Project Manager  
130 Robin Hill Road, Suite 100  
Santa Barbara, CA 93117  
[cindy\\_poire@urscorp.com](mailto:cindy_poire@urscorp.com)

**COUNSEL FOR APPLICANT**

Scott Galati  
Galati & Blek, LLP  
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Sacramento, CA 95814  
[sgalati@gb-llp.com](mailto:sgalati@gb-llp.com)

**INTERESTED AGENCIES**

California ISO  
P.O. Box 639014  
Folsom, CA 95763-9014  
[e-recipient@caiso.com](mailto:e-recipient@caiso.com)

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**ENERGY COMMISSION**

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Che McFarlin  
Project Manager  
[cmcfarli@energy.state.ca.us](mailto:cmcfarli@energy.state.ca.us)

**DECLARATION OF SERVICE**

I, Ashley Y. Garner, declare that on January 28, 2009, I deposited copies of the attached **APPLICATION FOR THE CANYON POWER PLANT** in the United States mail at Sacramento, CA with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

**OR**

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

  
\_\_\_\_\_  
Ashley Y. Garner