December 11, 2012

VIA EMAIL

Ms. Felicia Miller, Siting Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: Huntington Beach Energy Project (12-AFC-02)
   Applicant’s Correspondence Related to Air Quality

Dear Ms. Miller:

Applicant AES Southland Development, LLC and its consultant, CH2M Hill, Inc., has corresponded with the South Coast Air Quality Management District to resolve questions related to air quality emissions. Enclosed herein for docketing, please find such correspondence. These documents will be served to all parties pursuant to the enclosed Proof of Service.

Respectfully submitted,

Melissa A. Foster

MAF:jmw
Enclosure
cc: Proof of Service List
EMAIL CORRESPONDENCE AMONG AIR DISTRICT, CEC STAFF, AND APPLICANT REGARDING PM10 EMISSIONS
(DATED NOVEMBER 28 THROUGH DECEMBER 5, 2012)
Hi Tao,

Your correct that the 624 shutdowns equate to 104 hours of shutdown emissions. The following table presents our calculation method for the annual HBEP PM10/2.5 emissions.

### HBEP Shutdown Annual PM10/2.5 Emissions

<table>
<thead>
<tr>
<th>Event</th>
<th>Number</th>
<th>Hours</th>
<th>Emission Rate (lb/hr)</th>
<th>Annual PM10/2.5 (lb)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold Start</td>
<td>24</td>
<td>1.5</td>
<td>4.5</td>
<td>162</td>
<td></td>
</tr>
<tr>
<td>Warm/Hot</td>
<td>600</td>
<td>0.5417</td>
<td>4.5</td>
<td>1462.5</td>
<td>Hours = 32.5 min/60 min/hr</td>
</tr>
<tr>
<td>Shutdown</td>
<td>624</td>
<td>0.17</td>
<td>4.5</td>
<td>468</td>
<td>Hours = 10 min/60 min/hr</td>
</tr>
<tr>
<td>Unfired</td>
<td>1</td>
<td>5900</td>
<td>4.5</td>
<td>26550</td>
<td></td>
</tr>
<tr>
<td>Fired</td>
<td>1</td>
<td>470</td>
<td>9.5</td>
<td>4465</td>
<td></td>
</tr>
<tr>
<td><strong>Total per CTG</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>33107.5</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total Tons per CTG</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>16.6</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total Tons per 6 CTG</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>99.3</strong></td>
<td></td>
</tr>
</tbody>
</table>

Jerry Salamy  
Principal Project Manager  
CH2M HILL/Sacramento  
Phone 916-286-0207  
Fax 916-614-3407  
Cell Phone 916-769-8919

---

Tao Jiang, Ph.D., P.E.  
Air Resources Engineer  
Siting, Transmission and Environmental Protection Division California Energy Commission  
1516 Ninth Street, MS 46  
Sacramento, CA 95814-5504  
Phone: (916) 654-3852

---

From: Jiang, Tao@Energy [mailto:Tao.Jiang@energy.ca.gov]  
Sent: Wednesday, November 28, 2012 3:36 PM  
To: Chris Perri; Stephen O'Kane  
Cc: Mason, Robert/SCO; Salamy, Jerry/SAC; JAMCKINSEY@stoel.com; mafoster@stoel.com; Bemis, Gerry@Energy  
Subject: RE: HBEP PM10 emissions

Stephen,

I just find a minor difference between Chris's data and the data response to CEC. In CEC data response Table DR12-1, the number of annual shutdown is 624, which is OK. However, the number of hours is 104, not 62.4. Please clarify. Thanks.

Tao Jiang, Ph.D., P.E.

---

From: Chris Perri [mailto:CPerri@aqmd.gov]  
Sent: Wednesday, November 28, 2012 3:22 PM  
To: Stephen O'Kane  
Cc: 'Robert.Mason@CH2M.com'; 'Jerry.Salamy@CH2M.com'; JAMCKINSEY@stoel.com; mafoster@stoel.com; Bemis, Gerry@Energy; Jiang, Tao@Energy  
Subject: RE: HBEP PM10 emissions
Can you please update Table 5.1-13 to reflect this?

Chris Perri  
Air Quality Engineer  
South Coast Air Quality Management District  
(909) 396-2696

Chris,

A turbine start would not employ duct burners under any circumstance. All start times would be at 4.5 lb/hr.

Sorry about the delay on the start emissions. I'll check with the vendor right away.

Stephen O'Kane  
Sent from my mobile device

Stephen,

In performing the calculation for annual PM10 emissions I found that the total I come up with is 103.8 tpy. I am using the following information:

5,900 hrs per year with no duct firing, 4.5 lbs/hr
470 hrs per year with duct firing, 9.5 lbs/hr
36 hrs per year cold start (24 starts @ 1.5 hrs each), 4.5 lbs/hr
325 hrs per year warm + hot starts (600 starts @ 32.5 minutes each), 9.5 lbs/hr
62.4 hrs per year shutdowns (624 shutdowns @ 10 minutes each), 4.5 lbs/hr

The emission factors for start ups and shutdowns come from Table 5.1-13.

Also, I'm still waiting for the start up emission breakdown for NOx.

Thank you,

Chris Perri  
Air Quality Engineer  
South Coast Air Quality Management District  
(909) 396-2696

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Chris,

Table 5.1-13 hot and warm start hourly PM10/2.5 emission rates include 32.5 minutes of start-up PM10/2.5 emissions (4.5 pounds) with the balance of the hour (27.5 minutes) of duct fired PM10/2.5 emissions which is why the value is presented as <9.5 lb/hr. Since Table 5.1-13 was not intended to be used in estimating annual emissions, I don’t believe it requires correction.

To clarify the method used to calculate the annual PM10/2.5 emission rate, we calculated annual PM10/2.5 emissions based on start/shutdown hours only (465 hours/year per turbine) at an emission rate of 4.5 lb/hr as shown below.

HBEP Shutdown Annual PM10/2.5 Emissions

<table>
<thead>
<tr>
<th>Event</th>
<th>Number</th>
<th>Hours/Event</th>
<th>Annual Hours</th>
<th>Emission Rate (lb/hr)</th>
<th>Annual PM10/2.5 (lb)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold Start</td>
<td>24</td>
<td>1.5</td>
<td>36</td>
<td>4.5</td>
<td>162</td>
<td>Annual Hours = 1.5 hr * 24</td>
</tr>
<tr>
<td>Warm/Hot</td>
<td>600</td>
<td>0.5417</td>
<td>325</td>
<td>4.5</td>
<td>1462.5</td>
<td>Annual Hours = 32.5 min/60 min/hr * 600</td>
</tr>
<tr>
<td>Shutdown</td>
<td>624</td>
<td>0.17</td>
<td>104</td>
<td>4.5</td>
<td>468</td>
<td>Annual Hours = 10 min/60 min/hr * 624</td>
</tr>
<tr>
<td>Unfired</td>
<td>5900</td>
<td>1</td>
<td>5900</td>
<td>4.5</td>
<td>26550</td>
<td></td>
</tr>
<tr>
<td>Fired</td>
<td>470</td>
<td>1</td>
<td>470</td>
<td>9.5</td>
<td>4465</td>
<td></td>
</tr>
<tr>
<td>Total Hrs</td>
<td></td>
<td></td>
<td>6835</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total per Turbine 3310.5
Total Tons per Turbine 16.6
Total Tons per 6 Turbines 99.3

Jerry Salamy
Principal Project Manager
CH2M HILL/Sacramento
Phone 916-286-0207
Fax 916-614-3407
Cell Phone 916-769-8919

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Cc: Mason, Robert/SCO; Salamy, Jerry/SAC; JAMCKINSEY@stoel.com; mafoster@stoel.com; Tao.Jiang@energy.ca.gov; Gerry.Bemis@energy.ca.gov
Subject: RE: HBEP PM10 emissions

Can you please update Table 5.1-13 to reflect this?

Chris Perri
Air Quality Engineer
South Coast Air Quality Management District
(909) 396-2696

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Subject: Re: HBEP PM10 emissions

Chris,

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Sorry about the delay on the start emissions. I'll check with the vendor right away.

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Stephen,

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- 5,900 hrs per year with no duct firing, 4.5 lbs/hr
- 470 hrs per year with duct firing, 9.5 lbs/hr
- 36 hrs per year cold start (24 starts @ 1.5 hrs each), 4.5 lbs/hr
- 325 hrs per year warm + hot starts (600 starts @ 32.5 minutes each), 9.5 lbs/hr
- 62.4 hrs per year shutdowns (624 shutdowns @ 10 minutes each), 4.5 lbs/hr

The emission factors for start ups and shutdowns come from Table 5.1-13.

Also, I'm still waiting for the start up emission breakdown for NOx.

Thank you,

Chris Perri
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Hi Tao,

The NOx, CO, VOC, and SO2 emissions presented in Table 5-14 are based on an ambient air temperature of 32 F. We calculated the HBEP annual emissions based on the emission rates at the annual average ambient temperature of 65.8 F. AFC Appendix Table 5.1B.2 presents the operating parameters and emissions for 15 cases representing the range of operating loads and ambient conditions for the project. Cases 6 and 7 represent the annual average ambient conditions for fired and unfired conditions we used for the annual emission calculations. I have extracted the Case 6 and 7 emissions data from AFC Appendix Table 5.1B.2 and have presented it below. In calculating the annual start up/shutdown emissions, we used the pounds per event start up/shutdown emission rates and the number of events. The SO2 annual emissions were calculated using a fuel sulfur content of 0.25 grains/100 cubic feet of natural gas (or 2.37 lb SO2/hr fired and 1.71 lb SO2/hr unfired) recommended by the SCAQMD during a pre-application meeting. I revised your calculations to include our methodology (see below). Please let me know if you have any additional questions.

<table>
<thead>
<tr>
<th>Annual Average Emission Rates (lb/hr)</th>
<th>Fired</th>
<th>Unfired</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>13.63</td>
<td>9.85</td>
</tr>
<tr>
<td>CO</td>
<td>8.30</td>
<td>5.99</td>
</tr>
<tr>
<td>VOC</td>
<td>2.37</td>
<td>1.71</td>
</tr>
<tr>
<td>SO2</td>
<td>0.84</td>
<td>0.62</td>
</tr>
<tr>
<td>PM</td>
<td>9.50</td>
<td>4.50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>hours</th>
<th>lbs/hr</th>
<th>annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>no duct</td>
<td>5900</td>
<td>5.99</td>
<td>35359</td>
</tr>
<tr>
<td>Duct</td>
<td>470</td>
<td>8.30</td>
<td>3900</td>
</tr>
<tr>
<td>cold starts</td>
<td>24</td>
<td>115.9</td>
<td>2782</td>
</tr>
<tr>
<td>warm starts</td>
<td>150</td>
<td>46</td>
<td>6900</td>
</tr>
<tr>
<td>hot starts</td>
<td>450</td>
<td>33.6</td>
<td>15120</td>
</tr>
<tr>
<td>Shutdowns</td>
<td>624</td>
<td>45.3</td>
<td>28267</td>
</tr>
<tr>
<td>Total per CTG</td>
<td></td>
<td></td>
<td>92328</td>
</tr>
<tr>
<td>Total tons per CTG</td>
<td></td>
<td></td>
<td>46.2</td>
</tr>
<tr>
<td>Total tons of 6 CTGs</td>
<td></td>
<td></td>
<td>277.0</td>
</tr>
</tbody>
</table>

Jerry, 
Principal Project Manager 
CH2M HILL/Sacramento 
Phone 916-286-0207 
Fax 916-614-3407 
Cell Phone 916-769-8919
In the data response to CEC, table DR12-2 presents the annual emissions based on the revised operation profile. I am only able to repeat the results for PM10/2.5. My calculations for NOx, CO, SOx and VOC all come up with different numbers. I am using the emission factors in AFC table 5.1-13 (startups and shutdowns) and table 5.1-14 (fired and unfired). For example, the calculation for CO annual emissions:

<table>
<thead>
<tr>
<th></th>
<th>hours</th>
<th>lbs/hr</th>
<th>annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>no duct</td>
<td>5900</td>
<td>6.4</td>
<td>37760</td>
</tr>
<tr>
<td>duct</td>
<td>470</td>
<td>8.7</td>
<td>4089</td>
</tr>
<tr>
<td>cold starts</td>
<td>36</td>
<td>115.3</td>
<td>4150.8</td>
</tr>
<tr>
<td>warm starts</td>
<td>81.3</td>
<td>50</td>
<td>4065</td>
</tr>
<tr>
<td>hot starts</td>
<td>243.8</td>
<td>37.6</td>
<td>9166.88</td>
</tr>
<tr>
<td>shutdowns</td>
<td>104</td>
<td>50.7</td>
<td>5272.8</td>
</tr>
</tbody>
</table>

Total per CTG 64504.48
Total tons per CTG 32.25224
Total tons of 6 CTGs 193.5134

Please check if the emission factors need to be updated, or there are some errors in your calculations.

In addition, when transferring results from AFC table 5.1-13 to table 5.1-17, why the maximum emissions of CO and VOC do not reflect the cold startup emissions? Thanks.

Tao Jiang, Ph.D., P.E.
Air Resources Engineer
Siting, Transmission and Environmental Protection Division California Energy Commission
1516 Ninth Street, MS 46
Sacramento, CA 95814-5504
Phone: (916) 654-3852

From: Jerry.Salamy@CH2M.com
Sent: Wednesday, November 28, 2012 4:11 PM
To: Jiang, Tao@Energy; CPerri@aqmd.gov; stephen.okane@AES.com
Cc: Robert.Mason@CH2M.com; BEMCKINSEY@stoel.com; mafoster@stoel.com; Bemis, Gerry@Energy; kjhellwig@stoel.com
Subject: RE: HBEP PM10 emissions

Hi Tao,

Your correct that the 624 shutdowns equate to 104 hours of shutdown emissions. The following table presents our calculation method for the annual HBEP PM10/2.5 emissions.

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<thead>
<tr>
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<th>Number</th>
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<tbody>
<tr>
<td>Cold Start</td>
<td>24</td>
<td>1.5</td>
<td>4.5</td>
<td>162</td>
<td></td>
</tr>
<tr>
<td>Warm/Hot</td>
<td>600</td>
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<td>4.5</td>
<td>1462.5</td>
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<td>4.5</td>
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</tr>
<tr>
<td>Unfired</td>
<td>1</td>
<td>5900</td>
<td>4.5</td>
<td>26550</td>
<td></td>
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<tr>
<td>Fired</td>
<td>1</td>
<td>470</td>
<td>9.5</td>
<td>4465</td>
<td></td>
</tr>
</tbody>
</table>

Total per CTG 33107.5
Total Tons per CTG 16.6
Total Tons per 6 CTGs 99.3
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Principal Project Manager  
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Stephen,

I just find a minor difference between Chris’s data and the data response to CEC. In CEC data response Table DR12-1, the number of annual shutdown is 624, which is OK. However, the number of hours is 104, not 62.4. Please clarify. Thanks.

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A turbine start would not employ duct burners under any circumstance. All start times would be at 4.5 lb/hr.

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Tao,

Sorry I miss this question. Your correct that the maximum hourly CO and VOC emission rates in Table 5.1-17 should be the cold start hourly rates from Table 5.1-13.

Regarding your email questions on SO2 emission rates (Did you also revise the startup/shutdown SO2 emission factors by assuming the sulfur content of 0.25 grains /100 cubic feet? So the emissions factors for cold start/warm start/hot start/shutdown should be 0.66/0.88/0.88/0.66, instead of 1.97/2.64/2.64/1.97 as reported in table 5.1-13.), we used maximum allowable (SoCalGas Rule 30) natural gas sulfur content of 0.75 grains of total sulfur per 100 cubic feet of natural gas to estimate short term SO2 emission rates (1-hour, 3-hour, and daily) as this represented the maximum possible SO2 emissions on a short term basis. However, for calculating annual fuel sulfur levels, we used the 0.25 grains of sulfur /100 cubic feet of natural as suggested by the SCAQMD. To answer your question, the SO2 emission rates shown in Table 5.1-13 are correct and are based on a 0.75 grains of sulfur per 100 cubic feet of natural gas. The cold start up and shutdown SO2 emission rates presented in Table 5.1-13 are based on 1498 MMBtu/hr of fuel combustion (corresponding to base load operation at an ambient air temperature of 32F with no duct firing) with a 0.75 grains of sulfur per 100 cubic feet. The warm and hot start SO2 emission rates in Table 5.1-13 are based on a 2005 MMBtu/hr of fuel combustion (corresponding to base load operation at 32 F with duct burners firing) with a 0.75 grains of sulfur per 100 cubic feet.

Please let me know if you have any additional questions.

Jerry Salamy
Principal Project Manager
CH2M HILL/Sacramento
Phone 916-286-0207
Fax 916-614-3407
Cell Phone 916-769-8919
emission calculations. I have extracted the Case 6 and 7 emissions data from AFC Appendix Table 5.1B.2 and have presented it below. In calculating the annual start up/shutdown emissions, we used the pounds per event start up/shutdown emission rates and the number of events. The SO2 annual emissions were calculated using a fuel sulfur content of 0.25 grains/100 cubic feet of natural gas (or 2.37 lb SO2/hr fired and 1.71 lb SO2/hr unfired) recommended by the SCAQMD during a pre-application meeting. I revised your calculations to include our methodology (see below). Please let me know if you have any additional questions.

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<th>Annual Average Emission Rates (lb/hr)</th>
<th>Fired</th>
<th>Unfired</th>
</tr>
</thead>
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<tr>
<td>NOx</td>
<td>13.63</td>
<td>9.85</td>
</tr>
<tr>
<td>CO</td>
<td>8.30</td>
<td>5.99</td>
</tr>
<tr>
<td>VOC</td>
<td>2.37</td>
<td>1.71</td>
</tr>
<tr>
<td>SO2</td>
<td>0.84</td>
<td>0.62</td>
</tr>
<tr>
<td>PM</td>
<td>9.50</td>
<td>4.50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>hours</th>
<th>lbs/hr</th>
<th>annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>no duct</td>
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<td>5.99</td>
<td>35359</td>
</tr>
<tr>
<td>Duct</td>
<td>470</td>
<td>8.30</td>
<td>3900</td>
</tr>
<tr>
<td>cold starts</td>
<td>24</td>
<td>115.9</td>
<td>2782</td>
</tr>
<tr>
<td>warm starts</td>
<td>150</td>
<td>46</td>
<td>6900</td>
</tr>
<tr>
<td>hot starts</td>
<td>450</td>
<td>33.6</td>
<td>15120</td>
</tr>
<tr>
<td>Shutdowns</td>
<td>624</td>
<td>45.3</td>
<td>28267</td>
</tr>
<tr>
<td>Total per CTG</td>
<td>92328</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total tons per CTG</td>
<td>46.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total tons of 6 CTGs</td>
<td>277.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Jerry Salamy  
Principal Project Manager  
CH2M HILL/Sacramento  
Phone 916-286-0207  
Fax 916-614-3407  
Cell Phone 916-769-8919

From: Jiang, Tao@Energy [mailto:Tao.Jiang@energy.ca.gov]  
Sent: Tuesday, December 04, 2012 2:33 PM  
To: Salamy, Jerry/SAC; CPerri@aqmd.gov; stephen.okane@AES.com  
Cc: Mason, Robert/SCO; JAMCKINSEY@stoel.com; mafoster@stoel.com; Bernis, Gerry@Energy; kjhellwig@stoel.com  
Subject: RE: HBEP PM10 emissions

Jerry,

In the data response to CEC, table DR12-2 presents the annual emissions based on the revised operation profile. I am only able to repeat the results for PM10/2.5. My calculations for NOx, CO, SOx and VOC all come up with different numbers. I am using the emission factors in AFC table 5.1-13 (startups and shutdowns) and table 5.1-14 (fired and unfired). For example, the calculation for CO annual emissions:

<table>
<thead>
<tr>
<th></th>
<th>hours</th>
<th>lbs/hr</th>
<th>annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>no duct</td>
<td>5900</td>
<td>6.4</td>
<td>37760</td>
</tr>
<tr>
<td>duct</td>
<td>470</td>
<td>8.7</td>
<td>4089</td>
</tr>
<tr>
<td>cold starts</td>
<td>36</td>
<td>115.3</td>
<td>4150.8</td>
</tr>
<tr>
<td>warm starts</td>
<td>81.3</td>
<td>50</td>
<td>4065</td>
</tr>
<tr>
<td>hot starts</td>
<td>243.8</td>
<td>37.6</td>
<td>9166.88</td>
</tr>
<tr>
<td>shutdowns</td>
<td>104</td>
<td>50.7</td>
<td>5272.8</td>
</tr>
</tbody>
</table>
Please check if the emission factors need to be updated, or there are some errs in your calculations.
In addition, when transferring results from AFC table 5.1-13 to table 5.1-17, why the maximum emissions of CO and VOC do not reflect the cold startup emissions? Thanks.

Tao Jiang, Ph.D., P.E.
Air Resources Engineer
Siting, Transmission and Environmental Protection Division California Energy Commission
1516 Ninth Street, MS 46
Sacramento, CA 95814-5504
Phone: (916) 654-3852

Hi Tao,

Your correct that the 624 shutdowns equate to 104 hours of shutdown emissions. The following table presents our calculation method for the annual HBEP PM10/2.5 emissions.

<table>
<thead>
<tr>
<th>Event</th>
<th>Number</th>
<th>Hours</th>
<th>Emission Rate (lb/hr)</th>
<th>Annual PM10/2.5 (lb)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold Start</td>
<td>24</td>
<td>1.5</td>
<td>4.5</td>
<td>162</td>
<td></td>
</tr>
<tr>
<td>Warm/Hot</td>
<td>600</td>
<td>0.5417</td>
<td>4.5</td>
<td>1462.5</td>
<td>Hours = 32.5 min/60 min/hr</td>
</tr>
<tr>
<td>Shutdown</td>
<td>624</td>
<td>0.17</td>
<td>4.5</td>
<td>468</td>
<td>Hours = 10 min/60 min/hr</td>
</tr>
<tr>
<td>Unfired</td>
<td>1</td>
<td>5900</td>
<td>4.5</td>
<td>26550</td>
<td></td>
</tr>
<tr>
<td>Fired</td>
<td>1</td>
<td>470</td>
<td>9.5</td>
<td>4465</td>
<td></td>
</tr>
</tbody>
</table>

Total per CTG  33107.5
Total Tons per CTG  16.6
Total Tons per 6 CTG  99.3
Stephen,

I just find a minor difference between Chris's data and the data response to CEC. In CEC data response Table DR12-1, the number of annual shutdown is 624, which is OK. However, the number of hours is 104, not 62.4. Please clarify. Thanks.

Tao Jiang, Ph.D., P.E.
Air Resources Engineer
Siting, Transmission and Environmental Protection Division California Energy Commission
1516 Ninth Street, MS 46
Sacramento, CA 95814-5504
Phone: (916) 654-3852

From: Chris Perri [mailto:CPerr1@aqmd.gov]
Sent: Wednesday, November 28, 2012 3:22 PM
To: Stephen O'Kane
Cc: 'Robert.Mason@CH2M.com'; 'Jerry.Salamy@CH2M.com'; 'JAMCKINSEY@stoel.com'; 'mafoster@stoel.com'; Jiang, Tao@Energy; Bemis, Gerry@Energy
Subject: RE: HBEP PM10 emissions

Can you please update Table 5.1-13 to reflect this?

Chris Perri
Air Quality Engineer
South Coast Air Quality Management District
(909) 396-2696

From: Stephen O'Kane [mailto:stephen.okane@AES.com]
Sent: Wednesday, November 28, 2012 3:17 PM
To: Chris Perri
Cc: 'Robert.Mason@CH2M.com'; 'Jerry.Salamy@CH2M.com'; 'JAMCKINSEY@stoel.com'; 'mafoster@stoel.com'; 'Tao.Jiang@energy.ca.gov'; 'Gerry.Bemis@energy.ca.gov'
Subject: Re: HBEP PM10 emissions

Chris,

A turbine start would not employ duct burners under any circumstance. All start times would be at 4.5 lb/hr.

Sorry about the delay on the start emissions. I'll check with the vendor right away.

Stephen O'Kane
Sent from my mobile device

From: Chris Perri [mailto:CPerr1@aqmd.gov]
Sent: Wednesday, November 28, 2012 04:59 PM
To: Stephen O'Kane
Cc: Robert.Mason@CH2M.com, Jerry.Salamy@CH2M.com, JAMCKINSEY@stoel.com, mafoster@stoel.com, Tao.Jiang@energy.ca.gov, Gerry.Bemis@energy.ca.gov
Subject: HBEP PM10 emissions

Stephen,

In performing the calculation for annual PM10 emissions I found that the total I come up with is 103.8 tpy. I am using the following information:

5,900 hrs per year with no duct firing, 4.5 lbs/hr
470 hrs per year with duct firing, 9.5 lbs/hr
36 hrs per year cold start (24 starts @ 1.5 hrs each), 4.5 lbs/hr
325 hrs per year warm + hot starts (600 starts @ 32.5 minutes each), 9.5 lbs/hr
62.4 hrs per year shutdowns (624 shutdowns @ 10 minutes each), 4.5 lbs/hr
The emission factors for start ups and shutdowns come from Table 5.1-13.

Also, I’m still waiting for the start up emission breakdown for NOx.

Thank you,

Chris Perri
Air Quality Engineer
South Coast Air Quality Management District
(909) 396-2696

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APPLICATION FOR CERTIFICATION FOR THE
HUNTINGTON BEACH ENERGY PROJECT

Docket No. 12-AFC-02
(Revised 10/08/12)

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*indicates change

72538013.1 0043653-00005
DECLARATION OF SERVICE

I, Judith M. Warmuth, declare that on December 11, 2012, I served and filed a copy of the attached Applicant's Correspondence Related to Air Quality dated December 11, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at: http://www.energy.ca.gov/sitingcases/huntington_beach_energy/index.html.

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(Check all that Apply)

For service to all other parties:

☒ Served electronically to all e-mail addresses on the Proof of Service list;

☐ Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses marked "hard copy required" or where no e-mail address is provided.

AND

For filing with the Docket Unit at the Energy Commission:

☐ by personally delivering one electronic copy and one hard copy to the address below to the Docket Unit; OR

☒ by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION — DOCKET UNIT
Attn: Docket No. 12-AFC-02
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

docket@energy.ca.gov

OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

☐ Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

California Energy Commission
Michael J. Levy, Chief Counsel
1516 Ninth Street MS-14
Sacramento, CA 95814

michael.levy@energy.ca.gov

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

JUDITH M. WARMUTH

72538013.1 0043653- 000052