

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512



February 22, 2010

DOCKET
09-AFC-6

DATE FEB 22 2010

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Mr. Alan J. De Salvio
Supervising Air Quality Engineer
Mojave Desert Air Quality Management District
14306 Park Avenue
Victorville, California 92392

**Re: Comments on Preliminary Determination of Compliance (PDOC)
Blythe Solar Power Project (09-AFC-6)**

Dear Mr. De Salvio,

Energy Commission staff has reviewed the two Mojave Desert Air Quality Management District PDOCs for the Blythe Solar Power Project (Chevron Energy Solutions PDOC and Solar Millennium, LLC PDOC) and has the following comments for your consideration for inclusion in the Final Determination of Compliance (FDOC). The staff comments are identical for the Chevron Energy Solutions PDOC and the Solar Millennium, LLC PDOC.

Comments on PDOC Engineering Evaluation

Criteria Pollutant Emission Estimates

Staff is concerned with the inconsistencies between the maximum daily and annual operating emission estimates provided by the applicant in the Application for Certification (AFC) and in later responses to staff data requests and emissions estimates provided in the PDOC. Staff prefers that the Energy Commission's Staff Assessments, which are based on an analysis of the project described in the Application for Certification (AFC) and data responses, and the District's DOC are consistent in terms of the presented emission estimates.

The following tables provide a comparison between the AFC emission estimate values, or the latest values from applicant data responses, and the emission estimate values in the PDOC where there are discrepancies that are clearly more than simple calculation rounding issues. After each table is some discussion of the discrepancies. Staff would like the FDOC to correct the discrepancies in these emission estimates, including corresponding changes to the device conditions, and provide rationale why such corrections are or are not necessary.

Auxiliary Boiler – Emission Discrepancies

Auxiliary Boiler – Emission Discrepancies

	CO		PM10/PM2.5		SOx	
	lb/day	t/yr	lb/day	t/yr	lb/day	t/yr
Applicant Data	7.56	1.07	2.01	0.28	0.06	0.01
PDOC Table A-2	5.03	1.07	4.03	0.57	0.7	0.15

The carbon monoxide (CO) annual daily emissions estimate provided in PDOC Table A-2 has a calculation error in the second row (100% full load row). The daily value should be 2.644 pounds (lbs) but is shown as 0.076 lbs.

The particulate matter less than 10 or 2.5 microns (PM10/PM2.5) emission factor used for the PDOC is twice the emission factor used by the applicant (Applicant emission factor is 0.010 lb PM10/2.5 per million British Thermal units (lb/MMBtu). The PDOC notes that certain emission factors (including PM10/PM2.5) are from vendor data, so staff does not understand this discrepancy and would like the District to correct to the applicant's value or show why the applicant's value does not correspond with the vendor data as supplied to the District. Did the applicant provide different data to the AQMD than what they provided to Energy Commission staff?

The auxiliary boiler sulfur oxides (SOx) emissions shown in PDOC are not comparable to the SOx emissions shown in AFC, and appear to include an error in translating the stated United States Environmental Protection Agency AP-42 emission factor¹ (which should be approximately 0.0006 lb/MMBtu rather than 0.005 lb/MMBtu shown in PDOC table A-2). The applicant based SOx emissions on a fuel sulfur content of 0.2 grains sulfur per 100 scf, which is equivalent to 0.000272 lb/MMBtu). Staff has reviewed SoCalGas fuel sulfur content data and believes these fuel sulfur contents to be conservative and reasonable and requests the District use the same basis.

Heat Transfer Fluid (HTF) Heater – Emission Discrepancies

HTF Heater – Emission Discrepancies

	PM10/PM2.5		SOx	
	lb/day	t/yr	lb/day	t/yr
Applicant Data	3.50	0.09	0.10	0.002
PD0C Table A-3	7.00	0.18	1.83	0.046

PM10/PM2.5 emission factor used for the PDOC is twice the emission factor used by the applicant (Applicant factor is 0.010 lb/MMBtu). The PDOC notes that certain emission factors (including PM10/PM2.5) are from vendor data, so staff does not understand this discrepancy and would like the District to correct to the applicant's value or show why the applicant's value does not correspond with the vendor data as supplied to the District. Did the applicant provide different data to the AQMD than what they provided to Energy Commission staff?

The HTF heater SOx emissions shown in PDOC are not comparable to the SOx emissions shown in AFC, and appear to include an error in translating the stated AP-42 emission factor (which should be approximately 0.0006 lb/MMBtu rather than 0.005 lb/MMBtu shown in PDOC table A-3). The applicant based SOx emissions on a fuel sulfur content of 0.2 grains sulfur per 100 scf, which is equivalent to 0.000272

¹ *Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources*, <http://www.epa.gov/ttn/chief/ap42/index.html>

lb/MMBtu). Staff has reviewed sulfur content data from the natural gas supplier, the Southern California Gas Company, and believes these fuel sulfur contents to be conservative and reasonable and requests the District use the same basis.

Emergency Generator Engine – Emission Discrepancies

Emergency Generator Engine – Emission Discrepancies

	NOx		CO		PM10/PM2.5		SOx	
	lb/day	t/yr	lb/day	t/yr	lb/day	t/yr	lb/day	t/yr
Applicant Data	29.35	0.73	16.74	0.42	0.97	0.025	0.03	0.001
PDOC Table A-4	24.66	0.62	2.40	0.06	0.43	0.011	5.99	0.15

The emergency generator engine nitrogen oxides (NOx) emission factor given to staff by the applicant is 4.56 grams per brake-horsepower (g/bhp), while the District calculations use 3.83 g/bhp. The emergency generator engine CO emission factor given to staff by the applicant is 2.6 g/bhp, while the District calculations use 0.37 g/bhp. The emergency generator engine PM10/PM2.5 emission factor given to staff by the applicant is 0.15 g/bhp, while the District calculations use 0.07 g/bhp. Staff has no reason to believe that the values provided by the applicant in recent data responses are incorrect and suggests the District calculations use these values, or request that the District provide information to the Energy Commission verifying that they used the correct emission factors.

The emergency generator engine SOx emissions shown in PDOC are not comparable to the SOx emissions shown in AFC, and do not appear to consider the use of California Air Resources Board (ARB) 15 parts per million (ppm) sulfur diesel fuel. Staff requests that the FDOC correct the SOx emissions consistent with current ARB diesel fuel specifications.

Fire Water Pump Engine – Emission Discrepancies

Fire Water Pump Engine – Emission Discrepancies

	SOx	
	lb/day	t/yr
Applicant Data	0.003	0.0001
PDOC Table A-5	0.615	0.0016

The fire water pump engine SOx emissions shown in PDOC are not comparable to the SOx emissions shown in AFC, and do not appear to consider the use of ARB 15 ppm sulfur diesel fuel. Staff requests that the FDOC correct the SOx emissions to current ARB diesel fuel specifications.

Cooling Tower – Emission Discrepancies

Cooling Tower – Emission Discrepancies

	PM10/PM2.5	
	Lb/day	t/yr
Applicant Data	0.48	0.06
PDOC Table A-6	0.97	0.11

The cooling tower particulate emissions shown in PDOC Table A-6 appear to be for two cooling towers (i.e. two power blocks), rather than one cooling tower per unit per the project design, and as described as the calculation basis in the PDOC. The cooling tower emission limit condition includes this double counting error.

Presumptive MACT Standard for Expansion Tank/Ullage Vent System - Page 7

Staff requests that the FDOC provide the rationale for the presumptive Maximum Achievable Control Technology (MACT) determination (85% VOC control efficiency) provided in the PDOC. Staff would like to know if this determination is based on another MACT standard or any other regulatory finding (such as Best Achievable Control Technology - BACT) for a similar type of emission source.

Comments on PDOC Conditions

Staff believes that emission limitations in the District Conditions need to be revised consistently per any revisions made to address staff comments on the engineering evaluation's emission estimate.

If you have any questions, please contact Gerry Bemis of my staff at (916) 654-4960. Thank you for the opportunity to comment on the Blythe Solar Power Project's Preliminary Determinations of Compliance.

Sincerely,



MATT LAYTON, Manager
Engineering & Corridor Designation Office
Siting, Transmission and Environmental
Protection Division

cc: Docket