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March 19, 2009

Mr. Alan J. De Salvio
Supervising Air Quality Engineer
Antelope Valley Air Quality Management District
43301 Division Street, Suite 206
Lancaster, CA 93535-4649

Subject: Comments on Preliminary Determination of Compliance for Palmdale Hybrid Power Project (08-AFC-9)

Dear Mr. De Salvio,

On behalf of the City of Palmdale and Inland Energy Inc, AECOM Environment has reviewed the Preliminary Determination of Compliance (PDOC) for the Palmdale Hybrid Power Project (PHPP) that Antelope Valley Air Quality Management District (AVAQMD or District) provided for review on February 12, 2009.

As you are aware, the PHPP is a similar hybrid solar-combined cycle facility and is practically a "twin" to the recently permitted Victorville 2 Hybrid Power Project (VV2 Project) within the Mojave Desert AQMD. We note that it was practical for the AVAQMD to use the VV2 Final DOC as a template for producing the PHPP PDOC. However, the PHPP PDOC followed the VV2 FDOC too closely, and did not reflect a few changes between PHPP and VV2 that were in included in the application[1] for PHPP submitted to the AVAQMD. These changes that are not reflected in the PHPP PDOC include:

- PHPP proposed to use a 100 MMBtu/hr auxiliary boiler (which has been increased further as noted below) rather than the 35 MMBtu/hr boiler proposed for the VV2 Project;
- The emission rates for the combustion turbine at PHPP were slightly different at the various load and temperature scenarios due to the different site specific inputs into the engineering model;
- The emission rates for carbon monoxide (CO) from the auxiliary boiler and HTF heater were reduced from 100 ppm to 50 ppm, based on the CO Best Available Control Technology (BACT) Determination performed by the EPA for the VV2 Project; and
- Calculations of fugitive dust emissions from vehicles in the solar field were included in the PHPP application.

We also note that the PDOC reflects the non-attainment/attainment area classifications for the Victorville area and not the Palmdale area. In particular, the Antelope Valley is classified as attainment of the PM10 and PM2.5 national ambient air quality standards (NAAQS), rather than non-attainment as reflected in the PDOC.

[1] Per AVAQMD rules, the Application for Certification (AFC) that was submitted to the California Energy Commission (CEC) served as a substantive part of the application submitted to the District for this Project. Therefore, subsequent references to the AFC correspond to the application that was submitted to the AVAQMD for the development of this PDOC.

In addition to the above differences that should have been incorporated into the PHPP PDOC, some additional changes have subsequently been made to the PHPP. These changes were described in a recent (March 2, 2009) submittal made to the CEC entitled "Palmdale Hybrid Power Project Supplemental Responses to CEC Data Requests Set 1." These recent modifications include the following:

- The size of the auxiliary boiler has been changed from 100 MMBtu/hr to 110 MMBtu/hr;
- The stack height for the auxiliary boiler was increased from 30 feet to 60 feet;
- The stack heights of the emergency diesel generator and fire water pump engines were decreased from 30 feet to 16 feet; and
- The distance between the two combustion turbines was increased to 135 feet, allowing for more room for duct bank placement between the stacks.

Other changes have been made as well, for instance relocation of some features within the power plant site, however, the changes listed above are the only ones that we expect could have an effect (i.e., change the results) on the air quality impact assessment (AQIA) for the PHPP.

In order to ensure that these revisions to the stack heights and locations, and small emissions increases related to the 10 MMBtu/hr increase in the size of the boiler, did not alter the conclusions of the AQIA, revised modeling was performed. The results of the revised modeling are presented in revised AFC Table 5.2-48R attached (with the previous modeling results shown along side the new results in parenthesis). The modeling methodologies are the same as used for the AFC except that the emergency engines will only be tested between 6 am and 9 pm and time matched background values are paired with the 1-hour NO_2 results to give the maximum expected value.

As discussed in the March 2, 2009 submittal (page PD-4) to the CEC, the revisions do not change any of the conclusions with respect to the significance of the impacts as presented in the AFC. The 1-hour NO_2, 1-hour CO, and 1-hour SO_2 results are slightly higher than in the AFC, but still below the applicable California Ambient Air Quality Standards (CAAQS). All other results are the same as, or slightly less than, the results in the AFC. The one hour results increased slightly due to the reduction in the stack height of the two emergency engines, in particular the emergency generator. The results for longer averaging periods were about the same, or less, due to the increase in stack height of the boiler. The size/emissions increase for the boiler has a negligible impact on the results.

During the February 2, 2009 Workshop, the CEC indicated that they have some questions about the modeling files provided with the PHPP AFC, which are expected to be received shortly. We propose to wait until we see the CEC's comments prior to submitting revised modeling files for your review, in case additional changes are needed. A copy of the PDOC that reflects the changes discussed above (and shown in a "track changes" format) is attached. We believe that is the easiest way to show where changes are needed.

In our markup of the PDOC, we have only corrected specific items, and have not, for instance, provided additional detail on the District's Offsets analysis. We have received the CEC's comments on the PDOC dated March 16, 2009, and the CEC did comment on the Offsets Requirements section. We offer the following supplemental information related to their comments:

- Ozone Precursor (NOx and VOC) ERCs: A discussion of possible alternative sources of NOx and VOC ERCs was provided to the CEC in a Supplemental Responses to CEC Data Requests Set 1 dated February 13, 2009. Two potential options have been identified in lieu of use of Priority Reserve offsets (although efforts are also underway to restore the Reserve as a source of ERCs), including use of banked ERCs within the MDAQMD portion of the Mojave Desert Air

Basin (MDAB) or interbasin transfer from the SJVAPCD. We agree that additional information will be needed related to the required findings under state law, including concurrence of EPA, ARB and SJVAPCD if interbasin ERCs from SJVAPCD are used. Investigations on the availability of ERCs are proceeding within both the SJVAPCD and the MDAB. If ERCs from the SJVAPCD are used, we will work with the AVAQMD to make the required findings.

- PM10 ERCs from Road Paving: Similar to NOx and VOC ERCs, our understanding of the current status of the AVAQMD rule making was provided in the February 13, 2009 submittal to the CEC.

  Calculations of the fugitive dust emissions from the vehicles travelling in the solar field were provided in the AFC (AFC Table 5.2-27, Total Annual Potential Emissions, Normal Operations, as well as Table 35 in Appendix G). AVAQMD Rule 1305(E)(3)(iii) specifies that fugitive emissions must be included when calculating the base quantity of offsets needed. Upon further review of the fugitive PM10 and PM2.5 emissions due to vehicle use, we have decided to revise the calculation to be based on a MDAQMD default silt factor rather than a SCAQMD CEQA Handbook approach. The revised estimates based on this more conservative approach are 7.2 tpy and 0.7 tpy of PM10 and PM2.5, respectively. These emission estimates are considered to be very conservative because the solar field will be well maintained to reduce dust emissions since the mirrors must be kept clean to maintain maximum efficiency. Furthermore, experience at the existing SEGS facilities in the Mojave Desert indicate that the soils in the solar field become compacted and stabilized relatively quickly, and hence emissions are minimized. An updated Table 5.2-27R containing these revised fugitive emissions is provided below. The revised table also reflects the larger, 110 MMBtu/hr auxiliary boiler and a correction to the vehicle exhaust emissions.

Table 5.2-27R Total Annual Potential Emissions, Normal Operation

Source	NO_X (tpy)	CO (tpy)	VOC (tpy)	PM10/PM2.5 (tpy)	SO_2 (tpy)
Combustion turbines/HRSGs	113.7	252.6	39.64	117.1	8.83
Auxiliary Boiler	*0.30*	*1.01*	*0.15*	*0.20*	*0.016*
HTF Heater	0.22	0.74	0.11	0.15	0.012
Emergency Generator	0.67	0.39	0.04	0.022	0.0007
Fire-Water Pump Engine	0.03	0.026	0.001	0.0015	5.0E-05
Cooling Tower	n/a	n/a	n/a	7.1	n/a
Maintenance Vehicles[1]	*0.03*	0.12	*0.01*	*7.16/0.72*	0.001
Total	**115.*0***	**254.*9***	**40.0**	***131.7/125.3***	**8.9**

Revised emissions shown in *italic*

1. Maintenance vehicle PM10 and PM2.5 emissions include exhaust and fugitive emissions.

- Due Diligence in Acquiring Banked ERC from within the MDAB: As noted in Section 5.2.5.2 of the AFC, due diligence efforts to identify available ERC within the AVAQMD were conducted. Prior due diligence efforts within the MDAQMD portion of the MDAB were conducted for the VV2 Project and proved to be fruitless. However, as discussed previously, a significant new source of NOx ERCs is in the banking process within the MDAQMD, and subject to successful completion of the banking process, the Applicant is in negotiations to purchase those credits. If

sufficient credits are not available through this option, then additional due diligence will be conducted within the MDAB, e.g., KCAPCD, to determine if any credits are available and for sale.

- Incorrect Boiler Size and Emissions: As discussed above, we are in agreement with this CEC comment that the PDOC contained errors related to the size of the boiler. We are also in agreement that New Source Performance Standards (NSPS) and AVAQMD Regulation IX apply to the auxiliary boiler at 100 MMBtu/hr or greater, pursuant to 40 CFR Part 60 - Subpart Db.

- Changes to Applicant's Project Description: The CEC summarizes the Project changes that are being proposed at this time in two bullets under this comment. The first bullet is related to the site layout changes, such as the secondary road access, relocation of the gas metering station, etc., which do not impact the sources or emission rates assumed for the AQIA. The changes to the power block are discussed in our comments above, and the revised results given in the attached table demonstrate that the impacts are within the CAAQS – except for PM10 which is already over the CAAQS due to the high background levels in the area. The 24-hour and annual PM10 levels have decreased slightly due to the changes in the stack heights, locations, and emission rates now proposed.

  The CEC notes that the 1-hr NO_2 concentration provided in the AQIA in the AFC and the PDOC is very close to the CAAQS (98.6% of the standard – note this percentage is correct, but the value of 4.6 $\mu g/m^3$ appears to be a typographical error and should read 334.4 $\mu g/m^3$). The emergency generator with its relatively low stack is the major contributor to this impact. Reduction of the stack heights of the two engines did increase the predicted hourly NO_2 impact such that it was necessary to make some slightly less conservative assumptions for the modeling. The first assumption is that these engines will only be tested or maintained during the hours of 6 am to 9 pm. The second change is related to the Ozone Limiting Method (OLM) analysis. This analysis predicts the NO_2 concentration based on a modeled output paired with hourly ozone values. In the revised analysis, the hourly modeled output and hourly ozone values were also matched with the hourly background NO_2 concentration in that hour to provide a total NO_2 concentration. As shown in the attached table, this approach provides a concentration well below the 1-hour NO_2 CAAQS.

We appreciate the opportunity to comment on the PDOC. Should you wish to discuss any of these comments, please call either of the undersigned at (805) 388-3775.

Sincerely yours,

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Table 5.2-48R. Cumulative Modeling Results for Project Normal Operations in Comparison to the CAAQS

Pollutant	Averaging Period	AERMOD Predicted Concentrations ($\mu g/m^3$)				Background Value ($\mu g/m^3$)	Max Plus Background[2] ($\mu g/m^3$)	CAAQS ($\mu g/m^3$)	Percent of CAAQS
		2002	2003	2004	Max.				
NO_2	1-hour[1]	200.14	203.01	192.71	203.0	139.2[1]	291.1[1] (334.4)	339	85.9%
	Annual	6.01	5.84	6.09	6.1	28.2	34.3 (34.8)	57	60.2%
CO	1-hour	329.90	366.87	340.58	366.9	3,680	4,046.9 (3,931.8)	23,000	17.6%
	8-hour	19.21	19.06	20.37	20.4	1,840	1,860.4 (1,880.6)	10,000	18.6%
PM10	24-hour	12.73	12.87	12.39	12.9	86.0	98.9 (99.3)	50	197.7%
	Annual	1.11	0.98	0.99	1.1	25.0	26.1 (26.6)	20	130.6%
PM2.5	24-hour	12.73	12.87	12.39	12.9	17.0	29.9 (30.3)	35[3]	85.3%
	Annual	1.11	0.98	0.99	1.1	8.9	10.0 (10.4)	12	83.5%
SO_2	1-hour	1.68	1.63	1.55	1.7	34.1	35.8 (35.7)	655	5.5%
	3-hour	1.32	1.25	1.33	1.3	23.6	24.9 (24.9)	1,300[3]	1.9%
	24-hour	0.85	0.74	0.83	0.9	15.7	16.6 (16.6)	105	15.8%
	Annual	0.23	0.23	0.20	0.2	5.2	5.4 (5.4)	80	6.8%

1. Maximum concentration includes the modeled impacts plus time matched ambient NO_2 background. NO_2 background of 139.2 $\mu g/m^3$ listed is the maximum background over the 3 years shown and is given only for reference.
2. Value in parenthesis represents the maximum value shown in AFC Table 5.2-48 prior to the proposed changes.
3. Value represents the National Ambient Air Quality Standard as there is no CAAQS for this pollutant and averaging time.