UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

March 19, 2009

Eldon Heaston, Executive Director
Antelope Valley AQMD
43301 Division St., Ste. 206
Lancaster, CA 93535-4649

Re: EPA Comments on the PDOC for Palmdale Hybrid Power Project

Dear Mr. Heaston:

Thank you for the opportunity to comment on Antelope Valley Air Quality Management District's (AVAQMD) preliminary Determination of Compliance (PDOC) for the Palmdale Hybrid Power Project (PHPP), a proposed 570 MW hybrid power plant consisting of two natural gas-fired combined cycle combustion turbines and a solar thermal generator. Based on a discussion with Mr. Alan De Salvio of the Mojave Desert Air Quality Management District, we understand AVAQMD will accept our comments on March 19, 2009.

Our comments focus on federal New Source Review program requirements. Comments provided in the enclosure are made in reference to the PDOC submitted on February 16, 2009 and may not reflect current proposal conditions. Our comments address the PDOC evaluation, proposed permit conditions, and compliance demonstration requirements. Based on a review of recent information from the California Energy Commission's PHPP licensing site and brief discussions with the applicant's consultant, it has come to our attention that significant changes may be required in the PDOC in order to reflect the current state of the proposed facility. Changes in the proposal include a different method for obtaining the required emission offsets, an increase in the number of required offsets, along with alterations and an increase in the size of emission sources. For these reasons, we strongly recommend that the applicant submit a revised PDOC for review.

We are concerned that the proposed Emission Reduction Credits (ERC) and Lowest Achievable Emission Rate (LAER)/Best Available Control Technology (BACT) determinations fail to meet federal requirements. Our concerns are explained in detail in the enclosure.

We look forward to working with you to address our comments prior to the issuance of the Final Determination of Compliance (FDOC). Please contact Omer Shalev at (415) 972-3538 or Shirley Rivera at (415) 972-3966 of my staff if you have any questions.

Sincerely,

FOR

Gerardo C. Rios
Chief, Permits Office

Enclosure

cc: Bret Banks, Antelope Valley Air Quality Management District
Alan De Salvio, Mojave Desert Air Quality Management District
Keith Golden, California Energy Commission
Michael Tollstrup, California Air Resources Board

EPA Comments on the Preliminary Determination of Compliance (PDOC)[1] for The Palmdale Hybrid Power Project (PHPP)

Emissions Reductions Credits (ERC) / Emission Offsets

As required by District Rule 1302(B)(1), PHPP must offset emissions for nonattainment pollutants and their precursors. The proposed PHPP location is designated nonattainment under federal ozone and PM_{10} standards. Therefore, PHPP must obtain ERC for NO_x, VOC and PM_{10}.

On July 26, 1994, EPA's Office of Air Quality Planning and Standards (OAQPS) issued a policy memorandum to clarify whether offsets must be obtained prior to the issuance of a pre-construction permit. As part of the clarification, the memo explains that Congress has added new language to Section 173(a)(1) of the Clean Air Act (CAA) to explicitly mandate that offsets required as a precondition of NSR permit issuance under paragraph (a)(1) "shall be federally enforceable before such permit may be issued." Further, Section 173(c)(1) specifies that offsetting emission reductions "shall be, by the time a new or modified source commences operation, in effect and enforceable."

Based on the statutory language, offsets must be federally enforceable before the issuance of a final construction permit, i.e., the Final Determination of Compliance (FDOC). Moreover, the offsets must be quantifiable, surplus, real and permanent before the FDOC can be issued. However, the current PDOC which contains a brief proposal outlining potential ERC does not meet these stringent requirements. These requirements must be satisfied prior to the commencement of construction.

1. Road paving

PM_{10} ERC generated by a road paving project in the AVAQMD (near the project) fail to meet the strict requirements mentioned above. In addition to being unidentifiable and lacking specificity, the District must clarify whether ERC created by this paving project would be surplus. The surplus requirement demands that AVAQMD illustrate an approvable attainment or maintenance plan prior to the approval of emissions offsets. Prior to construction, road paving rules generating ERC must be SIP approved.

2. Inter-Pollutant Offsetting

AVAQMD employs an inter-pollutant offset ratio of 1.6:1 for VOC for NO_x that is not technically justified. EPA does not have an approved methodology to determine the appropriate ratio for inter-pollutant offsets. Several methods may be acceptable in conjunction with other considerations for this project. Application of the particular method used by PHPP, however, without considering area-specific inputs is not approvable. The burden in seeking approval for inter-pollutant offsets rests with the Applicant to demonstrate that the proposed inter-pollutant offsets will ensure a net benefit to air quality levels in the area of the proposed project.

[1] PDOC version dated February 16, 2009.

Modeling is a critical component of an inter-pollutant offset analysis, and subsequent models are evaluated on a case-by-case basis. Any approach for inter-pollutant offsets, therefore, must be carefully considered by the agencies in the context of a thorough and descriptive protocol. EPA, as well as the California Energy Commission (CEC) and the California Air Resources Board (CARB), must accept the assumptions and methodology used in this case. Accordingly, we recommend that PHPP and AVAQMD provide us, CARB and CEC with a protocol to be reviewed in advance of the applied methodology. We are available to discuss the schedule for submission of such a protocol and its components. At a minimum, the protocol should include standard information, such as model choice, episode selection, emissions inventory parameters and performance criteria.

3. Inter-District, Inter-Basin Offsetting

As stated in CAA Sec. 173 (c), "the owner or operator of a source of emissions may obtain such ERC from another nonattainment area if (A) the other area, in this case the San Joaquin Valley Air Quality Management District (SJVAQMD) and the South Coast Air Quality Management District (SCAQMD), has an equal or higher nonattainment classification than the area in which the source is located and (B) emissions from these other areas contribute to a violation of the National Ambient Air Quality Standards (NAAQS) in the nonattainment area in which the source is located."

AVAQMD includes ERC from SJVAQMD and SCAQMD, but AVAQMD must demonstrate that the nonattainment status of SJVAQMD and SCAQMD affect the proposed PHPP location. AVAQMD fails to identify where these ERC are specifically designated in AVAQMD's attainment plan. Thus, these ERC do not demonstrate a net benefit to air quality levels in the area of the proposed project.

BACT – PDOC Evaluation and BACT Demonstration

The PDOC BACT evaluation includes a discussion for NO_x, CO, and $PM_{2.5}$. At a minimum, the District's evaluation should confirm that the LAER/BACT limits are not less stringent than New Source Performance Standards (NSPS) and/or National Emissions Standards for Hazardous Air Pollutants (NESHAP) requirements, where applicable. Additionally, BACT limits should be no less stringent than SIP-approved rules for source specific standards.

EPA is aware that the following federal requirements[2] exist for the proposed equipment:

- Stationary combustion turbine: 40 CFR 60 Subpart KKKK, 40 CFR 63, Subpart YYYY
- Diesel-fired equipment: 40 CFR 60 Subpart IIII, 40 CFR 63 Subpart ZZZZ
- Auxiliary boiler: 40 CFR 60 Subpart Dc and Regulation IX-Rule 900 (C) (2) (d_c)[3].

[2] Federal NESHAP standards are included for completeness. Based on the PDOC evaluation the District has determined that the threshold equivalent of 10 tons per year (tpy) HAP and 25 tpy combined has not been triggered.
[3] EPA reviewed CEC's comments and received information from the Applicant's Consultant that the Applicant has proposed to increase the size of the auxiliary boiler from 35MMBtu/hr. to 110 MMBtu/hr. Subsequently, the larger

- HTF heater: 40 CFR 63 Subpart DDDDD

District Regulation IX, Rule 900, "Standards of Performance For New Stationary Sources (NSPS)" does not list 40 CFR 60 Subpart KKKK or Subpart IIII. Permit conditions should still establish limits which are in compliance with these federal regulations. Also under Regulation XI, the District lists various source-specific standards. Additional standards must be considered. For example, the combustion turbine generators may be subject to Rule 1134, "Emissions of Oxides of Nitrogen from Stationary Gas Turbines." The HTF heater should also comply with Rule 1146, "Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters."

BACT – PDOC Evaluation and Gas Turbine Emissions

We appreciate AVAQMD's inclusion of permit conditions for startup and shutdown (SU/SD) operating scenarios (e.g., mass limits, duration of startups and shutdowns, definitions of operating scenarios, etc.) for two combustion turbine generators in the PDOC. Furthermore, we understand that the PHPP facility will employ the "Rapid Start Process" for these combustion turbines.

Although the District discusses that PHPP proposes to use "Rapid Start Process" to minimize startup durations for NOx and CO emissions, we request additional information be included in the District's evaluation that supports the proposed permit conditions (e.g., emission limits, durations, and definitions) for SU/SD operations

EPA requires that BACT apply not only during normal, steady-state operations but also during all transient operating periods such as SU/SD periods. Therefore, as part of the BACT evaluation, we expect applicants to consider operating approaches, operating controls, work practices, and equipment performance and design that would minimize startup/shutdown (SU/SD) emissions. References from EPA's Environmental Appeals Board (EAB) that provide context are included below.

- **Rockgen Energy Center (PSD Appeal No. 99-1)**
  http://www.epa.gov/eab/disk11/rockgen.pdf
- **Tallmadge Generating Station (PSD Appeal No. 02-12)**
  http://www.epa.gov/eab/orders/tallmadge.pdf

BACT – Combustion Sources and Startup/Shutdown Emissions

In addition to conditions for the gas turbines, permit conditions, where applicable, should be specified for transient conditions of the following:

1. Auxiliary Boiler
2. Heat Transfer Fluid Heater
3. Emergency Generator

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boiler would be required to meet 40 CFR 60 Subpart Db. Furthermore, amended emission calculations must appear in order to ensure BACT compliance.

4. Emergency Fire Suppression Water Pump

The District has proposed 100 ppmvd CO at 3% O_2 for the natural gas combustion auxiliary boiler. The District did not demonstrate that a lower emission rate is possible for this equipment. For example, Victorville 2 plant proposes a limit of 50 ppmvd at 3% O_2 for identical equipment.

Federal Prevention of Significant Deterioration (PSD) Requirements and Discussion

The District presents a discussion of select PSD requirements in Section 6 (PSD Class I Area Protection) and Section 7 (Air Quality Impact Analysis) of the PDOC evaluation. However, EPA did not receive the PSD permit application and has jurisdiction for issuing the PSD permit. The District should not represent this analysis in the PDOC (or the FDOC) as if it has conducted the review.

Permit and Evaluation Improvements – Suggested Updates and Considerations

The following presents suggested updates and considerations for the PDOC evaluation and proposed permit conditions. PDOC conditions were reviewed to ensure federally enforceable conditions, where applicable, provide for the necessary compliance demonstration. The following are several suggested permit improvements.

In the final Determination of Compliance, it would be beneficial to include a process flow diagram or table describing all emission sources for the facility, as well as a tabular format of emissions.

1. PM_{10} and $PM_{2.5}$ emissions: Emissions must include a reference to $PM_{2.5}$ emissions, where applicable, even when emissions are assumed to be equal to PM_{10}.

2. Cooling tower description and permit conditions: A more thorough description of the cooling towers including the number of cells, operating assumptions and work practice operations should be provided in the PDOC evaluation. As part of the permit conditions, in addition to the PM_{10} hourly emission limit, the assumed maximum total dissolved solids (TDS) should be included in the section titled "Cooling Tower Authority to Construct Conditions." We noted that the calculated PM_{10} hourly emission rate is based on a TDS of not more than 5,000 ppm.

3. High heating value calculations: Operational and transient emissions based on General Electric data must be verified to include calculations that are explicitly based on natural gas characteristics expected to be delivered to the facility and based on high heating values (HHV). From the information presented, it is unclear the assumed natural gas heat value is representative of what is expected to be delivered to the facility. Furthermore, for all the combustion sources, it is unclear whether the assumed heat ratings (i.e., MMBtu/hr) for calculating the potential-to-emit (PTE) are based on the lower or higher heating values. The PTE should be based on the HHV.

4. Acid Rain Program: The PDOC evaluation should include a reference to the requirement for the Applicant to submit their completed Acid Rain permit application at least 24 months prior to the date on which the unit commences operation. Please refer to 40 CFR Parts 72.30(b)(2)(ii) and 72.6(a)(3)(i).

5. Operating definitions: The following are select operating definitions. They are not intended to be the only suggested terms that should be defined further.
    a. Condition 5.a.: The PDOC defines startup "as the period beginning with ignition and lasting until the equipment has reached *operating permit limits*". Please identify the specific *operating permit limits* referenced in this instance.
    b. Condition 5.a.: "Cold startup is defined as a startup when the combustion turbine generator has not been in operation during the *preceding 48 hours*." Please confirm whether *preceding 48 hours* intended to be a continuous 48 hour period. Additionally, if there is a relatively short-term aborted startup during a 48 hour period, please clarify whether the District would consider the following startup to be considered a "cold startup" rather than a "warm startup."
    c. Condition 10: Please reference the permit conditions that must be met when the equipment is considered *fully functional.*

6. Initial Startup Notification and Clarification: In Condition 12, please identify what is specifically meant by *initial equipment startup.* It is unclear whether this refers to the first fire of natural gas for each combustion turbine. In addition to including a definition for *initial equipment startup*, the District should include a condition for PHPP to notify the District of the initial startup date.

7. Pipeline quality natural gas: Condition 2 requires that *pipeline quality natural gas* be fired on the combustion turbines and that the sulfur content not exceed 0.2 grains per 100 dscf. Please specify the compliance demonstration method for assuring the sulfur content will not be exceeded. Because these turbines are subject to the Acid Rain Provisions and this requirement is intended to demonstrate compliance with the Acid Rain provision, the definition of *pipeline natural gas* is specific and allows an emission factor of 0.0006 lb SO2/MMBtu (per Appendix D, which also presumes that the natural gas heating value ranges from 950-1,100 Btu/scf (HHV) for a contract or tariff sheet that may be used for compliance demonstration).

8. CARB Diesel: Condition 4 for both pieces of diesel-fired equipment allows for *CARB Diesel* or equivalent requirements. Please note that, although the State provisions may allow for an alternative liquid fuel to be fired, a condition should be included to ensure that a fuel switch to an alternative liquid fuel be subject to permit applicability and processed accordingly.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
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APPLICATION FOR CERTIFICATION
For the *PALMDALE HYBRID POWER PROJECT*

Docket No. 08-AFC-9

PROOF OF SERVICE
(Revised 4/30/2009)

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DECLARATION OF SERVICE

I, Teraja Golston, declare that on May 29, 2009, I served and filed copies of the attached EPA Comments on PHPP PDOC. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: **[http://www.energy.ca.gov/sitingcases/palmdale/index.html]**. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

For service to all other parties:

_X__sent electronically to all email addresses on the Proof of Service list;

__X__ by personal delivery or by depositing in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

For filing with the Energy Commission:

_X__ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (preferred method);

OR

_____depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-9
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

docket@energy.state.ca.us

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

_____
Teraja Golston