

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512

June 4, 2007

Mr. David Warner
 Director of Permit Services
 San Joaquin County Air Pollution Control District
 1990 East Gettysburg Avenue
 Fresno, CA 93726

DOCKET	
06-AFC-10	
DATE	JUN 04 2007
RECD.	JUN 04 2007

Re: Comments on Preliminary Determination of Compliance (PDOC)
Project Number: C1063535 – Starwood Power-Midway, LLC (06-AFC-10)

Dear Mr. Warner,

The California Energy Commission staff commends the District on its comprehensive PDOC for the Starwood Power-Midway (Starwood) project. Staff has reviewed the PDOC and has the following comments for your consideration for inclusion in the Final Determination of Compliance (FDOC).

Hourly Emission Rates

The PDOC revises the hourly emission rates of VOC, CO, and NH₃ in an attempt to make them consistent with the Best Available Control Technology (BACT) emission levels. However, the emission rates provided appear to be internally inconsistent given that the BACT emission levels are all based on ppmvd at 15 percent oxygen. Staff's calculations indicate the following minor variation with the PDOC's normal hourly emission rates for volatile organic compound (VOC), carbon monoxide (CO) and ammonia (NH₃).

Pollutant	Staff's EF	PDOC EF
CO	4.09	4.19
VOC	0.78	0.82
NH ₃	4.14	4.24

EF – Hourly Emission Factor (lbs/hour)

Staff's calculations are based on ideal gas law, where assuming all of the BACT levels are based on ppmvd at 15 percent oxygen the emissions can easily be calculated based on the (nitrogen oxides) NO_x emission limit of 2.80 lb/hour. An example is as follows:

$$\text{CO lbs/hr} = 2.80 \text{ NO}_x \text{ lb/hour} \times (6.0 \text{ ppmvd CO BACT} / 2.5 \text{ ppmvd NO}_x \text{ BACT}) \times (28 \text{ (CO MW)} / 46 \text{ (NO}_2 \text{ MW)}) = 4.09 \text{ lbs/hour}$$

Staff believes this internally consistent calculation leads to the correct BACT emission limits for these pollutants, assuming that the NO_x emission limit is correct to three digits as provided by the project applicant. We believe these emission rates provide internally

consistent BACT emission rates and that these lower emission rate for VOC, CO and NH₃ should be the BACT emission rate bases for the daily and quarterly emission limits.

Additionally, the PDOC, unlike in the case for VOC and NH₃, does not indicate the basis for the revised emission rate value for CO on page 8. We recommend that a notation regarding the CO emission rate change should be added in the FDOC.

Quarterly Hours of Operation Limitation

The PDOC conditions do limit quarterly emissions, but do not provide operating limits by quarter. The project applicant has stipulated to quarterly operation limits in the AFC, as provided on Page 3 of the District's PDOC evaluation. Staff suggests that you add these quarterly limits in a permit condition, as was done in the Panoche Energy Center PDOC.

Major Source Definition

Staff believes that a clear definition of "major source" would be useful on page 13 below the major source determination table. This table indicates that the project along with the existing Calpeak Panoche facility constitute a major source. However, later in the PDOC certain major source triggers are not met by the project since it by itself is not a major source. Some description and clarification regarding the project's major source status for later rule applicability would be useful below the table on page 13. Without this clarification, to the layman, the later discussion under Compliance Certification on page 32 would appear in conflict with the major source findings shown on page 13.

Initial Commissioning Limitation

The project applicant has stipulated to minimizing initial commissioning impacts by only commissioning one Swiftpac unit at a time. Staff recommends that the District memorialize this stipulation by adding a condition that limits the initial commissioning operation to no more than one Swiftpac operating without a functioning Selective Catalytic Reduction (SCR) system and oxidation catalyst.

Initial Commissioning Emission Limit for VOC – Conditions 12 and 14

Staff believes that VOC should be an added pollutant specified in Condition 12 as the VOC emissions may be impacted by the operation of the oxidation catalyst. Staff also believes that the emission rate for VOC given in Condition 14 should be consistent with the maximum hourly emission rate for VOC, which is the startup emission rate of 0.83 lb/hour, rather than the 0.80 lb/hour given in the condition. Staff recognizes that this could be a simple typographical error.

Initial Commissioning Emissions Accrual Condition 18

Condition 18 of the PDOC should refer to Condition 39 rather than Condition 38. Additionally, staff believes that this condition should also state that the emissions from initial commissioning should also accrue against the quarterly emission limits provided in Condition 38 after being summed for all four combustion turbine generators (CTGs).

Emission Reduction Credits Certificate Numbers

Staffs review of the SJVAPCD's website ERC lists indicates that a PDOC listed ERC certificate has been reissued with a new certificate number. Specifically the SOx ERC formerly listed as S-2459-2 has been reissued to the project applicant as S-2492-5. The PDOC needs to be updated, particularly Condition 3, to reflect the current ERC certificate number. While Condition 3 does provide a parenthetical statement that addresses certificate renumbering staff believes that the FDOC conditions should be based on the latest available information at the time of its publication.

Startup/Shutdown Emissions

Staff believes that the startup/shutdown emissions presented in the PDOC do not use a reasonable basis and do not reflect the emissions stipulated to by the project applicant in the AFC. The PDOC uses worst-case emissions determined based on one hour of operation in startup or shutdown mode. However, the project applicant has indicated that the startup and shutdowns should take 18 minutes each with normal emissions occurring the other 42 minutes of a startup/shutdown hour (AFC p. 5.2-17). The project applicant, to staff's knowledge, has not specifically requested any other limitations on the startup or shutdown mode time or maximum emissions. Therefore, staff requests that either the FDOC reflect a revision of the startup/shutdown emission limits appropriate to 18 minutes in startup/shutdown mode. Alternatively, please provide the District's position on why the selection of the hour long startup and shutdown periods was made in the PDOC and why it will be retained in the FDOC. Any changes made to the PDOC's hourly startup/shutdown emissions made will need to be reflected as appropriate in the emission totals and the Districts DOC conditions, specifically Conditions 31 and 32.

The project applicant's modeling analysis clearly noted that the maximum hourly CO emissions were the initial commissioning rate of 19.9 lbs/hour. Therefore, it appears clear that the project applicant did not intend the startup duration to last a full hour to reach the hourly emission rate of 21.33 lbs/hour. Additionally, if the shutdown emissions are to be limited to 21.33 lbs/hour, then Condition 14 should use this emission rate as the worst-case hourly emission rate for CO during initial commissioning, rather than the 19.9 lbs/hour currently provided in the condition.

Startup/Shutdown Emission Limit Averaging Periods

PDOC Condition 31 and 32 allow a three hour averaging period for the startup and shutdown emission rates, respectively. This is inconsistent with the duration of startup/shutdown event timeframes, as described in the comments directly above and below this comment. Staff believes this should be shortened to one hour averaging periods.

Startup/Shutdown Time Limits

PDOC Condition 34 limits startup/shutdown time to two hours per event. However, the events are noted to be 18 minutes each by the project applicant and staff has not received any information from the project applicant requesting a startup/shutdown event time of two hours, or even greater than 18 minutes. Please either provide notation of the project applicant's request for this duration in the FDOC or reduce the duration limit in Condition 34 to a value more consistent with the project applicant's provided startup/shutdown timeframe, a more appropriate value. For comparison, the Pastoria expansion simple cycle 7F turbine was limited to startup/shutdown durations of one hour.

Ammonia Emission Limit

Staff believes that Condition 30 should be amended to include the hourly ammonia emission limit, as was provided in the Panoche Energy Center PDOC, as follows:

30. The ammonia (NH₃) emissions shall not exceed either of the following limits: 4.24 lb/hr or 10 ppmvd @ 15% O₂ over a 24 hour rolling average. [District Rules 2201 and 4102]

If you have any questions, please contact Keith Golden of my staff at (916) 653-1643. Thank you for the opportunity to comment on the Starwood Power-Midway project Preliminary Determination of Compliance.

Sincerely,



PAUL RICHINS
Environmental Protection Office Manager

cc: Docket