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California Energy Commission
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TN # 68985
DEC. 28 2012

California Energy Commission
Dockets Unit, MS-4
Docket No. 08-AFC-1C
1516 Ninth Street
Sacramento, CA 95814-5512
docket@energy.ca.gov

Re: Avenal Energy Project Proposed Decision Modification (08-AFC-1C)

Dear Commissioners:

The Center on Race, Poverty, & the Environment ("CRPE") submits these comments in opposition to the proposed modifications to allow for construction and operation of the Avenal Energy Project as either a major or a minor stationary source of criteria air pollutant emissions.

CRPE represents low-income communities and communities of color throughout the Central San Joaquin Valley, including in Kings County, where this project would be located. People living in the communities surrounding this Project—more than 90 percent of whom are minorities—are already living with both substandard air quality and significant respiratory health problems as the Central Valley, including Kings County, has worse air quality than any other region in the Nation. Yet the California Energy Commission proposes to allow Avenal Energy to construct and operate even if a ruling from the Ninth Circuit Court of Appeals would require that Avenal Energy first demonstrate that the facility complies with new nitrogen dioxide ("NO_2") National Ambient Air Quality Standards for the one-hour averaging time. Avenal Energy has been unable to demonstrate compliance with the new standard and by seeking this modification from the CEC intends to avoid the necessary analysis even if ordered by the Court. The CEC should not intervene here to circumvent the judicial process; rather it should postpone considering or approving any modification until the Court renders its decision and the parties comply with the Court's ruling.

If the CEC allows the project to proceed prior to the Court's resolution of the litigation and without requiring Avenal Energy to demonstrate compliance with NAAQS, it will violate Government Code 11135 and Title VI of the Civil Rights Act, since such a decision will disproportionately and negatively impact Latino residents. The CEC's failure to identify and mitigate potential environmental impacts of the modification, as required by 20 CCR § 1769 and 20 CCR § 1755, places the communities of Avenal, Huron and Kettleman City at unreasonable risk of unhealthy short-term exposures to NO_2.

I. THE MODIFIED PROJECT WILL CAUSE POTENTIALLY SIGNIFICANT IMPACTS FROM SHORT-TERM NO_2 EMISSIONS.

Exposure to nitrogen dioxide, a by-product of fossil fuel combustion, is associated with children's hospital admissions, emergency department visits, and aggravation of asthma. Persons with preexisting respiratory disease, children, and older adults may be more susceptible to the effects of NO_2 exposure. Individuals in sensitive groups may be affected by lower levels of NO_2 than the general population or

experience a greater impact with the same level of exposure. In addition to intrinsically susceptible groups, people living and working near roadways may be at increased vulnerability due to higher exposures.

In 2010, EPA set a new 1-hour NO_2 standard at 100 parts per billion ("ppb") to provide protection from short−term exposure to elevated NO_2 levels, which EPA determined was particularly important for asthmatics and members of other sensitive populations, such as children and the elderly. Staff Report at 9.

Under the Clean Air Act, PSD permit applicants must demonstrate, prior to commencing construction, that a project "will not cause, or contribute to, air pollution in excess of any . . . national ambient air quality standard ['NAAQS']" and that the project is "subject to the best available control technology ['BACT'] for each pollutant subject to regulation" under the Act. 42 U.S.C. § 7475(a)(3)-(4). Therefore, the Clean Air Act compels Avenal Energy to demonstrate compliance with the new 1-hour NO_2 NAAQS prior to construction of the current project. EPA's unexpected exemption of Avenal Energy from this requirement is currently being litigated in the Ninth Circuit Court of Appeals.

The applicant proposes this modification without making any project design or technology changes for the sole purpose of avoiding compliance with the new 1-hour NO_2 NAAQS even if ordered by the Court. The modification would not reduce the project's 1-hour NO_2 emissions. Staff Report at 9. The project's impacts on nearby sensitive populations from short-term exposure to NO_2 will also remain the same. Title 20 of the California Code of Regulations requires that the CEC analyze the impacts of its permitting decision as well as mitigate any significant impact. 20 CCR § 1769; 20 CCR § 1755. The CEC staff report for the modification does not include a comprehensive analysis of these impacts as required by law. In fact, the staff report's analysis of 1-hour NO_2 impacts consists of little more than a page and simply restates the local air district's findings that were strongly criticized by the EPA.

As lead agency, the CEC should independently analyze and consider all existing data on the project's potential to impact nearby residents from NO_2 emissions. This data includes information on background NO_2 emissions in the region, emissions from the proposed project, and cumulative impacts and risks particular to the local area. All available data suggests that the project will cause a significant impact on nearby residents from 1-hour NO_2 emissions which will need to be mitigated by the CEC.

A. EPA's Data Demonstrates that the Project Will Have a Significant Impact.

Despite several attempts, Avenal Energy was unable to demonstrate compliance with the new NO_2 standard to EPA's satisfaction prior to being exempted from the requirement. See attached August 12, 2010 Letter from EPA to Mr. Rexroad (hereafter "2010 EPA Letter"). EPA rejected Avenal Energy's attempts to demonstrate compliance on multiple occasions. In its August 12, 2010 letter to the Avenal Energy Center, EPA stated that "we believe the submittals from Avenal to date do not contain all the information necessary for an acceptable 1-hour NO_2 compliance analysis." 2010 EPA Letter at 1. EPA specifically objected to Avenal's use of its analysis for compliance with the annual NO_2 standard to demonstrate compliance with the new 1-hour NO_2 standard. EPA explains:

> [T]he facility impact combined with background levels of NO_2 for the 1-hour NO_2 NAAQS is near the standard, and therefore a more detailed analysis is warranted. . . . The spatial and temporal distribution of hourly NO_2 levels from the proposed facility and surrounding emissions cannot be assumed to be identical to the annual distribution, and therefore the previous analysis regarding representativeness for the annual NO_2 NAAQS cannot simply be referenced as being adequate to address the issue of representativeness for the 1-hour NO_2 NAAQS." Attachment 1 to 2010 EPA Letter at 1.

EPA also challenged Avenal Energy's failure to model nearby sources in addition to monitored background values. This type of analysis is especially important for this project site because of its proximity to Interstate 5 and many other potential NO_2 sources. EPA states that it does not believe that Avenal Energy "provides an adequate basis on which EPA can determine whether all sources expected to

cause a significant concentration gradient in the vicinity of the source under consideration for emission limits have been considered." Attachment 1 to 2010 EPA Letter at 2. The EPA objected because Avenal Energy's analysis of localized impacts prepared for the CEC and relied upon for the PSD permit excluded existing sources from consideration as well as all sources beyond six miles from the facility. Attachment 1 to 2010 EPA letter at 3.

EPA challenged Avenal Energy's use of the Hanford monitoring station stating that "the statements that the source is 28 miles northeast of the project site, is the closest source, and is adequately close, are not sufficient to show that the data is representative…. The effect of local sources on the formation and destruction of ozone should be considered. For example, is the monitoring station near a roadway that may be a local sink of ozone? Conditions at the project site should be compared to conditions at monitoring sites in the San Joaquin Valley." Attachment 1 to 2010 EPA Letter at 8-9. EPA identified numerous other deficiencies with Avenal Energy's 1-hour NO_2 analysis. See 2010 EPA letter.

After EPA exempted Avenal Energy from demonstrating compliance with the 1-hour NO_2 NAAQS, the agency did its own Environmental Justice Analysis to determine whether the project would have a disproportionate impact on residents of color from short-term exposure to NO_2. EPA found that since Avenal Energy did not demonstrate compliance with the 1-hour NO_2 NAAQS, EPA did not have sufficient information to make a definitive finding. However, much of EPA's data is informative and shows a high likelihood that the project's NO_2 emissions will negatively impact nearby residents.

EPA indicates that the closest existing monitoring stations measuring short-term NO_2 are located in Hanford and Visalia with respective NO_2 levels of 50 ppm and 61 ppm. EPA's Supplemental Statement of Basis (Hereafter "SSB") at 26. EPA estimates the Avenal Energy's maximum hourly NO_2 impact to be 44 ppb or 44 percent of the 1-hour NAAQS (100 ppb). SSB at 27. This available evidence shows that the Project's emissions added to background conditions results in emission levels between 91 and 102 ppb, nearly exceeding or exceeding the 100 ppb standard which EPA determined necessary to protect asthmatics and other sensitive populations, such as children and the elderly.

Additionally, all available data demonstrates that background levels in Hanford and Visalia are lower than what would be expected in the project vicinity. As EPA points out, "NO_2 concentrations on or near major roads are appreciably higher than those measured at monitors in the current network [such as Hanford and Visalia] . . . and near roadway concentrations have been measured to be approximately 30 to 100% higher than those measured away from major roads." SSB at 19. Kettleman City, a community near the project site, is directly adjacent to Interstate 5 – one of the State's main commerce freeways – and therefore is reasonably expected to have background levels of NO_2 of at least 65 ppb (30 percent greater than Hanford's 50 ppb background level). In a "worst case" scenario, background levels in Kettleman City could be 130 ppb (100 percent greater than Visalia's 65 ppb). In addition, Kettleman City hosts the Kettleman Hills Hazardous Waste Landfill and will be impacted by hundreds of trucks passing through and idling near the community each day. Given these estimates, the Project would result in NO_2 emission levels between 109 ppb and 174 ppb, well above the 100 ppb health- protective standard.

The CEC's staff report does not address the many deficiencies identified by EPA for Avenal Energy's NO_2 analysis, nor does the CEC consider other data in EPA's analysis that suggest that the project site has higher background NO_2 levels than currently measured by the monitoring system.

B. Data from the Local Air District Demonstrates that the Project Will Have A Significant Impact.

The local air district's analysis of the Project's 1-hour NO_2 emissions offers more conclusive evidence of the project's impacts from NO_2 emissions. The San Joaquin Valley Air Pollution Control District prepared an assessment of the project's compliance with the State's 1-hour NO_2 standard as part of Avenal's original application to the CEC. The assessment found that the project's cumulative total impact for 1-hour NO_2 emissions (maximum facility impact and background) is 327.2 µg/m3 or 179 ppb. EPA

Response Letter, Attachment 1 at 13. This emission level is well above the 100 ppb health-protective standard established by EPA. EPA Response Letter, Attachment 1 at 13.

The local air district issued a revised determination of compliance which differed greatly from its initial calculations—the District lowered its original calculation of 327 µg/m3 to 185 µg/m3. The District's new analysis does not describe why the District lowered its calculation of 1-hour NO_2 cumulative emissions given that the proposed modifications would not change the project's hourly emission potential. In fact, the District's Tier I and Tier II modeling analysis demonstrated that the Avenal Energy project would exceed the 1-hour NO2 NAAQS. See Staff Report at 10.

In response to the district's revised analysis, EPA submitted comments explaining that the district's State Implementation Plan requires that its determination of NAAQS compliance must be consistent with EPA's most recent "Guidelines on Air Quality Models." EPA then explained that since the hourly emissions rates of the modified project remain the same as those of the project as approved, the district should consider EPA's concerns with Avenal Energy's analysis, referenced above and attached to this letter. The air district made no changes and added no new information in response to these concerns.

EPA also expressed concern that the District's rationale for its conclusion that the project's emissions will not cause or contribute significantly to a violation of the 1-hour NO_2 NAAQS "is not clear from the documents provided." EPA explains that "it is unclear how the modeling analysis meets the requirements of Appendix W . . . or whether the District intended to follow those requirements for the proposed permit revision." The local air district made no changes in response to these comments.

The CEC is the lead agency for this project and should not simply rely upon the local air district's analysis, especially since the analysis differs so greatly from its earlier calculations, does not appear to be sufficiently supported by evidence, and does not follow the required guidelines. Because the project is proposed in an area that already suffers from such high pollution, the CEC should take every precaution to ensure that the project will not subject nearby residents to harmful levels of NO_2. The CEC should ensure that the 1-hour NO_2 analysis complies with necessary guidelines and that EPA's concerns are addressed prior to approving the modification.

II. THE MODIFIED PROJECT WOULD HAVE DISPROPORTIONATE IMPACTS ON LATINO RESIDENTS, IN VIOLATION OF TITLE VI AND GOVERNMENT CODE 11135.

If the CEC receives either state or federal funding, it may not take an action that has a discriminatory impact on the basis of race, color, or national origin. 42 U.S.C. 2000d; Cal. Gov't Code § 11135. The CEC has not assessed the environmental justice ramifications of this modification. In fact, the modification will have a disproportionate impact on the basis of race and national origin because the modification will allow the facility to proceed in an area with high concentrations of Latino residents without ensuring that new health-protective standards for NO_2 are met. The CEC should not make a decision on the permit modification permit until it can determine if the modification will disproportionately impact local residents on the basis of race and national origin and avoid those impacts. The CEC should also consider impacts to economically disadvantaged populations and the cumulative impacts facing these communities given other environmental stressors.

The Avenal Energy Project is proposed to be built and operated in Avenal, California, just a few miles from the environmental justice communities of Avenal, Huron, and Kettleman City. The communities of Avenal, Huron, and Kettleman City include "populations of interest" for the purposes of analyzing impacts on overburdened communities given that they have a very high (more than 85 percent) minority population, are highly linguistically isolated, and are predominately low-income. The median household income within a 15-km radius from the project site is more than $20,000 below the state average. The percent of linguistically isolated households in the State of California is 10 percent compared to 30 percent of households in the 25-km radius around the site. Even without a new 600-megawatt fossil fuel power plant, these communities are already burdened by multiple environmental harms.

The San Joaquin Valley is one of the worst-polluted air basins in the nation and suffers from some of the highest ozone and particulate matter levels in the country. Drinking water in these rural communities is contaminated with high levels of arsenic, benzene and other toxins. Toxic pesticides and other agricultural chemicals applied to surrounding agricultural fields can drift into the homes and yards of local residents, many of whom also work in the fields. Additionally, Kettleman City is located adjacent to the Interstate 5 freeway, a sewage sludge processing operation, defunct oil and natural gas extraction operations, and the state's largest hazardous waste landfill, which has been repeatedly found in violation of its permits. Kettleman City has experienced a rash of unexplained birth defects and childhood cancers. All three communities are plagued by high unemployment and lack of access to health care, making it difficult to cope with the health impacts associated with the high levels of pollution in the area. Together, these impacts contribute to, among many other harms, higher-than-average asthma rates and other respiratory-related hospitalizations and emergency room visits. According to the EPA, nearly a quarter of Kings County's children suffer from asthma; the second highest lifetime prevalence rate in the State. SSB at 23.

Exposure to nitrogen dioxide increases childhood hospital admissions and emergency department visits, and aggravates asthma. SSB at 20. In addition to intrinsically susceptible groups, people living and working near roadways may be at increased vulnerability due to higher exposures. SSB at 21. The CEC should assess these factors to identify the environmental justice ramifications of the proposed modification. If the CEC approves the modification without assessing whether its action will disproportionally impact Latino residents, the CEC may violate Title VI of the Civil Rights Act of 1964 and California Government Code § 11135.

III. CEC SHOULD NOT PERMIT AVENAL ENERGY TO AVOID OBTAINING A PSD PERMIT.

In its comments on the air district's 1-hour NO_2 analysis, EPA notes that "The applicant's simultaneous application for both a minor source permit and a major source PSD permit for the project raises a potential concern about circumvention of PSD preconstruction requirements. Attempts to expedite construction by securing minor source status through receipt of operational restrictions from which the source intends to free itself shortly after operation are to be treated as circumvention of the preconstruction review requirements. . . If a major source permit application is filed simultaneously with or approximately the same time as the minor source construction permit, this is strong evidence of an intent to circumvent the requirements of preconstruction review." Here, there is no question that the purpose of the modification is to avoid the demonstrations required for a PSD permit in the event the Ninth Circuit Court of Appeals rules in favor of the environmental organizations. The CEC should not permit Avenal Energy's permit modification for such an improper purpose.

IV. EMISSION REDUCTIONS ARE NOT VERIFIABLE OR ENFORCEABLE.

The emission reductions proposed by Avenal Energy to avoid PSD permit requirements are not associated with any design or technology changes. See Staff Report at 4. Instead, Avenal Energy is proposing to change the "annual operating profile" to reduce project annual emissions to "minor" PSD levels. *Id.* To achieve this, Avenal Energy proposes a 70 percent reduction of NO_2 emissions (from 144.3 to below 100) with no changes to the project design and without specifying how it would change its operations. Rather, Avenal Energy identifies five different scenarios in which it could reduce emissions to below the 100 ton threshold. This lack of specificity makes it impossible for enforcement agencies or interested parties to determine whether or not the company is taking appropriate steps to reduce emissions. The proposal is also overly dependent on self-monitoring where the company has an especially high incentive to report data that permits the project to remain below the threshold.

EPA notes that "[f]or those sources where emission estimates and/or emission limits are relatively close to the federal thresholds, EPA encourages the following: (a) refinement of emissions and compliance demonstration methods that would ensure the thresholds would not be exceeded, and/or (b) a 5-10% buffer

between the permitted emission limits and the federal threshold." Here, the proposed annual NOx emission limits are within a margin of less than 5 percent of the federal annual threshold limit for defining a new major stationary source under the PSD permit program. However, neither the district, nor the CEC has adopted EPA's suggestions.

Given that the NOx permit limit is within less than 1 percent of the PSD permit threshold, EPA also suggests that Avenal Energy should report more frequently as the actual emissions approach or exceed 90 percent of the 12-consecutive month rolling average permit limit to assure the 100 tpy threshold is not exceeded. Again, neither the air district nor the CEC adopted any changes to address this comment. If the CEC does permit the modification, it should require additional measures, such as those recommended by the EPA, to ensure that the permit limits are not exceeded.

If the facility does exceed its annual limit, the CEC does not provide any corrective action until the year's end, even if the facility exceeds its emission goals every month. Since the public's health is impacted by short-term exposures, which ebb and flow during the year, the CEC should place short-term emission restrictions on the facility in addition to the annual limit.

If the facility does not meet its annual limit, which is likely given the slim margin between estimated emissions and the PSD threshold, it is unclear what corrective measures the CEC will require. Will Avenal Energy immediately become subject to PSD requirements, or will the CEC provide Avenal Energy additional opportunities to comply with the terms of their modified permit? The CEC should ensure that Avenal Energy ceases operation and immediately complies with PSD permitting requirements as soon as it becomes apparent that the facility may exceed the NOx threshold.

Given the minimal threshold margin, the likelihood that the project will exceed 1-hour NO2 NAAQS, the vulnerability of nearby populations, and the difficulty in enforcing Avenal Energy's proposed emission reductions, the CEC should at the very least adopt additional conditions to ensure that the project remains below the PSD threshold, demonstrates compliance with all NAAQS, and provides better mechanisms to ensure that the project's estimated emission reductions are real, verifiable and enforceable.

V. CONCLUSION

For the reasons stated above, CRPE requests that the CEC conduct further analysis of the modification's impacts, especially on nearby low-income communities and communities of color. Pending further analysis, CRPE requests that the CEC deny the request for modification or postpone consideration of the request until after the Ninth Circuit Court of Appeals issues its decision and the parties comply with the ruling.

CRPE also objects to the timing of the public comment period. Public participation is a key principle of environmental justice so that those impacted by decisions have a fair opportunity to be included in the process. As such, the public participation process should be accessible to those impacted by the decision. The scheduling of this public comment period to coincide with the holiday season may be interpreted as motivated by a desire to stifle public dialogue and participation. The effect of this scheduling is that many of those impacted by this proposal will not have the opportunity to comment due to travel and other obligations. CRPE urges the CEC to extend the comment period so that all impacted parties may consider and comment on the proposal. CRPE also requests a formal public hearing on the modification. Thank you for your consideration of these comments. Please notify CRPE about any further actions on this project.

Sincerely,

Ingrid Brostrom
Senior Attorney

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105.3901

AUG 1 2 2010

VIA EMAIL AND U.S. MAIL

Jim Rexroad
Avenal Power Center,
LLC One Allen Center
500 Dallas Street, Level
31 Houston, TX 77002

Dear Mr. Rexroad:

Thank you for the letters of June 28, 2010 and July 13, 2010 from your counsel, Jeffrey Holmstead, to Ms. Julie Walters, counsel for EPA Region 9, and Ms. Stephanie Talbert, counsel with the U.S. Department of Justice. These letters provide the Avenal Power Center LLC's (Avenal or APC) response to EPA's letter dated June 15, 2010 concerning Avenal's Supplemental NO2 Air Quality Impact Analysis for the Avenal Energy Project (AEP) dated May 13, 2010 and submitted to EPA on May 14, 2010. Avenal's supplemental analysis was intended to address the 1-hour national ambient air quality standard (NAAQS) for nitrogen dioxide (NO2), which became effective April 12, 2010, for the ABP.

EPA's June 15, 2010 letter stated that EPA had determined that significant additional information must be provided by Avenal for EPA to evaluate whether emissions from the AEP will cause or contribute to ambient air pollution in excess of the Federal 1-hour NO2 standard. The EPA letter provided further detail about 10 areas in Avenal's May 13, 2010 submittal in which EPA had determined that additional information was necessary. Avenal's June 28, 2010 and July 13, 2010 letters indicate that Avenal believes that all necessary information has been submitted to EPA to demonstrate compliance with the 1-hour NO2 NAAQS. We disagree. While some of the requested information has been provided, we believe the submittals from Avenal to date do not contain all the information necessary for an acceptable 1-hour NO2 NAAQS compliance analysis. The text in Attachment 1 below provides a detailed explanation of why the information submitted by Avenal to date is not adequate to demonstrate compliance with the 1-hour NO2 NAAQS and describes what additional information would be necessary for EPA to evaluate Avenal's analysis.

Avenal's June 28 and July 13 letters also reiterate Avenal's position that the 1-hour NO2 NAAQS does not apply to the AEP, but that Avenal has provided additional modeling information for that standard in an effort to obtain its PSD permit in a timely manner. We certainly understand Avenal's frustration with having to address the Federal 1-hour NO2

standard at this stage in the PSD permit decisionmaking process, but we have nevertheless determined that Avenal must provide information to demonstrate that emissions from the AEP will not cause or contribute to air pollution in excess of the 1-hour NAAQS for NO2, as required by CAA 165(a)(3). EPA interprets the Clean'Air Act and applicable regulations to require that PSD permits issued under 40 CFR 52,21 on or after the effective date of the Federal 1-hour NO2 standard, April 12, 2010, must contain a demonstration that the source's allowable emissions will not cause or contribute to a violation of that standard. See *Applicability of the Federal Prevention of Significant Deterioration Permit Requirements to New and Revised National Ambient Air Quality Standards*, authored by Stephen D. Page, Director, EPA Office of Air Quality Planning and Standards, dated April 1, 2010.

We note that in initial discussions with Avenal regarding the 1-hour NO2 NAAQS, Avenal indicated that it would work with EPA to develop a modeling protocol for this project appropriate for addressing the 1-hour NO2 NAAQS, and EPA agreed to this approach. However, Avenal chose to forgo obtaining EPA's input on the protocol and instead provided written submittals, starting with the May 13, 2010 submittal, that contain information that we believe is inadequate or incomplete to demonstrate the AEP's compliance with the 1-hour NO2 NAAQS, as described in our June 15, 2010 letter and in Attachment 1 below. EPA requested several weeks ago to meet with Avenal's technical staff to discuss in further detail EPA's comments on Avenal's 1-hour NO2 NAAQS analysis as well as options for addressing those comments; however, Avenal representatives stated that Avenal did not wish to have such a discussion with EPA at that time. We remain willing to have this technical discussion, and we encourage Avenal to contact us to discuss in detail Avenal's proposed approach for addressing EPA's remaining concerns, described below, prior to submitting additional information to us.

We would also like to note that Avenal's submittals to date pertaining to the Federal 1-hour NO2 standard rely heavily on information, data and justifications previously submitted to EPA and other regulatory agencies concerning the project in the context of analyses for other standards. Avenal's June 28 letter states that it is puzzling that EPA would send its June 15 letter, late in the permitting process, that "completely ignores hundreds of pages of data, analysis, and explanation that EPA requested long ago, that APC provided long ago, and that technical experts from EPA, APC, and other environmental agencies have already reviewed and found to be acceptable. Yet the June 15th letter and its attachment are focused almost entirely on issues that have already been resolved with EPA and are discussed in great detail for the permitting record."

As a technical and a legal matter, the information, data, protocols and analyses previously provided by Avenal to EPA and/or other regulatory agencies for the purposes of demonstrating compliance with the Federal annual NO2 standard or the State 1-hour NO2

standard cannot simply be assumed to demonstrate the AEP's compliance under the Clean Air Act PSD program with the Federal 1-hour NO2 standard. Further, EPA did not previously accept or approve Avenal's use of such information, data, protocols and analyses for the purposes of demonstrating compliance with the Federal 1-hour NO2 standard; indeed, that standard had not been finalized at the time such information was initially submitted and thus would not have been reviewed for that purpose.

Clean Air Act section 165(a)(3) requires the owner of operator of a facility subject to PSD to demonstrate compliance with each NAAQS. The demonstration to be provided by the applicant pursuant to CAA 165(a)(3) must include a CAA PSD modeling analysis specific to each Federal standard that triggers PSI) review. Technical modeling issues may vary depending on the specific air quality standard and averaging period at issue. Thus, assumptions and justifications made with respect to one pollutant or averaging time may not be appropriate for demonstrating compliance with a different pollutant or averaging period. Further, State air quality standards that are not based on a Federal standard may involve regulatory requirements different from those governing the PSI) program. In the case of the AEP, information, data, protocols and analyses previously submitted by Avenal to EPA or other State and local regulatory agencies to demonstrate compliance with the annual NO2 standard or which discuss the State 1-hour NO2 standard (which differs from the Federal 1-hour NO2 standard) cannot be assumed appropriate for demonstrating compliance with the Federal 1-hour NO2 standard absent specific technical justification provided by the applicant supporting their application for modeling under the PSD program for the Federal 1-hour NO2 standard. In our view, acceptable justification for using much of the information previously submitted has not yet been provided by Avenal. In some areas, the information submitted is clearly inadequate for a 1-hour NO2 NAAQS modeling demonstration and must be supplemented with a complete analysis.

Avenal's letter dated July 13, 2010 states that "EPA has refused to approve [Avenal's] modeling, saying, among other things, that it wanted to finalize modeling guidance for the new 1-hour NO2 standard and then review [Avenal's] new modeling against that guidance." This statement is incorrect. EPA's June 15 letter did not state that EPA would not review or approve Avenal's submittal pending the issuance of formal EPA guidance. The fact that EPA provided a detailed response on June 15, 2010 to Avenal's submittal, prior to the issuance of EPA's guidance on June 28-29, 2010, belies this statement. EPA's June 15, 2010 letter merely mentioned that we anticipated that an EPA guidance document on NO2 modeling would be issued very shortly, and discussed several areas in which we understood the guidance would provide further clarification, in order to provide Avenal with relevant information.

As noted in Avenal's July 13 letter, EPA did recently issue guidance relating to modeling for the 1-hour NO2 NAAQS, with a cover memorandum entitled *Guidance Concerning*

Implementation of the 1-hour NO2 NAAQS for the Prevention of Significant Deterioration Program, dated June 29, 2010, that included two attached guidance documents, one of which was entitled *Applicability of Appendix W Modeling Guidance for the 1-hour NO2 National Ambient Air Quality Standard,* dated June 28, 2010. These guidance documents provide EPA's current views on certain subjects relevant to the 1-hour NO2 NAAQS. The July 13 letter and its attachment describe why Avenal believes that its analysis addresses various components of the guidance. We have reviewed and considered that discussion in the July 13 letter, and our response is provided in Attachment 1 below.

In light of the fact that Avenal has filed a lawsuit seeking a final PSD permit decision from EPA for the AEP, and the fact that it is not clear from previous discussions with Avenal whether Avenal will be providing additional modeling information for the 1-hour NO2 NAAQS, we request that Avenal provide a written response to this letter by August 17, 2010 confirming that it intends to provide additional information and justification that fully addresses EPA's remainingsconcems as described in the detailed comments below. If Avenal does not intend to fully address all those concerns, please describe those concerns that Avenal intends to further address and those it does not. If Avenal does not indicate that it intends to provide additional information or analysis demonstrating compliance with the 1-hour NAAQS by August 17, 2010, we plan to proceed with permit decisiomnaking for the AEP based on the information received to date. On the other hand, if Avenal does plan to provide additional information, we request that that information be provided by no later than September 13, 2010. If you believe that additional time is needed for providing the requested information, we would be happy to discuss that with you.

Sincerely,

'Gerardo Rios
Chief, Air Permits Office

Attachment

cc (w/attachment, via email and U.S. Mail):
Jeffrey R. Holmstead, Bracewell & Giuliani
LLP Gary Rubenstein, Sierra Research

ATTACHMENT 1

On June 15, 2010, EPA provided a written response to Avenal's Supplemental NO2 Air Quality Impact Analysis for the Avenal Energy Project dated May 13, 2010. This supplemental analysis was intended to address the 1-hour national ambient air quality standard (NAAQS) for nitrogen dioxide (NO2), which became effective April 12, 2010. On June 28, 2010, the applicant provided a written response to EPA's June 15, 2010 letter. In a letter dated July 13, 2010, the applicant provided some additional information concerning the analysis. This letter provides EPA's response to the applicant's June 28, 2010 submittal, as well as a response to certain aspects of the July 13 letter (and its attachment) where the letter provided additional information from the June 28, 2010 letter.

Sununary of EPA's Responses to Avenal's June 28,2010 Letter, Paragraphs 1-12

Avenal's response provides sufficient information to address several of the comments made in EPA's June 15, 2010 letter. The information provided for downwash (paragraph 9) and operating emissions (paragraph 4) is adequate.

With respect to several other issues, EPA believes that substantial additional information will be required for review. Specifically, the information provided in the applicant's response for nearby sources (paragraph 1) and justification for the method of adding modeled and monitored data (paragraphs 7 and 8) are not adequate.

EPA has also reviewed the justification for the ambient and meteorological data (paragraphs 3, 10 and 11). Although the response does provide some information, based on previously submitted information for the annual NO2 NAAQS, the level of detail provided is not sufficient for an analysis of the 1-hour NO2 NAAQS. While the facility impact was well below the annual NO2 NAAQS -- less than one percent of the standard the facility impact combined with background levels of NO2 for the 1-hour NO2 NAAQS is near the standard, and therefore a more detailed analysis is warranted. In addition, the spatial and temporal distribution of hourly NO2 levels from the proposed facility and surrounding emissions cannot be assumed to be identical to the annual. distribution, and therefore the previous analysis regarding representativeness for the annual NO2 NAAQS cannot simply be referenced as being adequate to address the issue of representativeness for the 1-hour NO2 NAAQS.

The justification for use of the non-regulatory-default PVMRM option in AERMOD is not sufficient, and needs to be expanded (paragraphs 2 and 12), including additional information on stack gas NO2/NOx ratios (paragraph 6). Some additional information regarding emissions (paragraph 5) also needs to be provided.

These issues are discussed in greater detail below.

Discussion of EPA's responses to Paragraphs 1-12

The major headings below refer to the paragraph numbers in Avenal's June 28, 2010 response.

I. Paragraph 1

Comment 1 in Attachment A to EPA's June 15, 2010 letter stated:

> Avenal's May 13, 2010 1-hour NO2 submittal did not include necessary information indicating which, if any, nearby sources were modeled or the process used to determine which nearby sources should be included. A full impact analysis should include modeling of nearby sources as well as monitored background values. The recommendations for modeling for nearby sources are discussed in EPA's *Guideline on Air Quality Models* **(40** CFR Part 51, Appendix W) Subsection 8.2.3, and relevant excerpts are quoted below. All sources expected to cause a significant concentration gradient in the vicinity of the source or sources under consideration for emission limit(s) should be explicitly modeled. Please provide a description of the process used for determining which nearby sources should be included in the modeling, as well as the modeling analysis for any such sources.

EPA's June 15 letter also quoted relevant language from *Guideline on Air Quality Models* Subsection 8.2.3.

Paragraph 1 of Avenal's June 28, 2010 refers to EPA's Comment 1, and states that "[t]he record for the AEP PSD permit already contains this information." It cites information from two analyses: the Localized Impacts analysis previously provided by the applicant to the California Energy Commission (CEC), and the Additional Impact Analysis previously submitted by the applicant (March 2009, Class II Impacts Analysis).

EPA does not believe that the information described in paragraph 1 of Avenal's June 28, 2010 letter provides an adequate basis on which EPA can determine whether all sources expected to cause a significant concentration gradient in the vicinity of the source under consideration for emission limits have been considered. As discussed in more detail below, the information provided in the applicant's June 28, 2010 letter, including the attachments provided for the Localized Impact Analysis and Additional Impact Analysis, is not sufficient for EPA to determine if the recommendations in the *Guideline on Air Quality Models* **(40** CFR Part 51, Appendix W, Subsection 8.2.3) have been met.

A. Localized Impact Analysis

The applicant's June 28 response on this issue discusses the Localized Impacts analysis, which was provided to the California Energy Commission (CEC). The Localized Impact Analysis does not address nearby sources as recommended in the *Guideline on Air Quality Models* **(40** CFR Part 51, Appendix W), Subsection 8.2.3. The

requirements of the CEC Localized Impact Analysis, as presented in Section 6.2.7.1.2 of the AFC, differ from PSD program criteria in several significant aspects, such as excluding sources beyond six miles, and being limited to stationary sources. In addition, although the CEC Localized Impact Analysis includes a requirement to address existing sources, the applicant excluded existing sources from consideration. These issues are discussed in more detail below.

1. Applicant's June 28, 2010 response.

The applicant's June 28, 2010 response states that "AFC Section 6.2.7.1.2 (Localized Impacts) thoroughly discussed the criteria used to evaluate whether any stationary sources existed within six miles that would qualify to be explicitly included in a cumulative air quality modeling impact analysis. None were identified by either the Applicant or the SJVAPCD."

AFC Section 6.2.7.1.2 (Localized Impacts) is presented here:

> 6.2.7.1.2 *Localized Impacts*
> The CEC has defined this local analysis as "a cumulative air quality modeling impacts analysis of the project's typical operating mode in combination with other stationary source emissions sources within a six-mile radius which have received construction permits but are not yet operating, or are in the permitting process."[footnote omitted] Within the distance of six miles, three categories of projects with combustion sources were evaluated:
>
> - Existing projects that have been in operation since at least January 2006.
> - Projects for which air pollution permits to construct have been issued and that began operation after 2006.
> - Projects for which air pollution permits to construct have not been issued, but are reasonably foreseeable.
>
> Existing projects that have been in operation since at least January 2006 are reflected in the ambient air quality data that have been used to represent background concentrations for the proposed project; consequently, no further analysis of the emissions from this category of facilities was performed.
>
> The District was requested on July 19, 2007, to provide information on any sources that might be appropriate (i.e., within 6 miles and with an emission increase of at least 5 tons per year for a criteria pollutant) for a cumulative air quality impact analysis, but has not identified any. Consequently, no localized cumulative impact modeling analysis was performed for the proposed project.

2. Discussion of applicant's response.

The applicant's reference to the CEC Localized Impact Analysis previously conducted for purposes of its State and local permitting process does not demonstrate that

it has followed a technically adequate process for identifying all sources expected to cause a significant concentration gradient in the vicinity of the source under consideration for emission limits, which should be explicitly modeled, in the context of the PSD program. The Localized Impact Analysis provided by the applicant does not fully address all the factors germane to the identification of nearby sources in the context of PSD modeling, as explained in more detail below.

a. CEC requirements differ from PSD criteria.

First, the requirements of the CEC Localized Impact Analysis, as presented by the applicant, differ from PSD criteria in several significant aspects. The CEC has defined this local analysis as "a cumulative air quality modeling impacts analysis of the project's typical operating mode in combination with other stationary source emissions sources within a six-mile radius". In contrast, the sources to be considered for inclusion in the PSD nearby source analysis are not limited to a six mile radius, and are not limited to stationary sources. Further, the PSD nearby source analysis is not limited to a modeling analysis of the project's typical operating mode.

b. Existing sources are not included in the applicant's response.

Second, while both the CRC's definition of a Localized Impact Analysis and EPA PSD recommendations for a nearby source analysis include consideration of existing sources, the applicant has chosen to exclude existing sources in its CEC Localized Impact Analysis, based on the assertion that "[e]xisting projects that have been in operation since at least January 2006 are reflected in the ambient air quality data that have been used to represent background concentrations for the proposed project." The applicant provides no demonstration, however, of how the sources at issue are reflected in the ambient air quality data that have been used to represent background concentrations for the proposed project. This is particularly problematic in light of the fact that the existing projects are presumably within a distance of six miles of the source, whereas the background monitoring site is 28 miles away, at Hanford.

In addition, background monitoring data may not reflect existing sources operating at their full operating capacity. 40 CFR Part 51, Appendix W, Subsection 8.2.1.c. states that "[Once sources don't typically operate at their maximum allowable capacity (which may include the use of 'dirtier' fuels), modeling is necessary to express the potential contribution of background sources, and this impact would not be captured via monitoring. Background concentrations should be determined for each critical (concentration) averaging time."

40 CFR Part 51, Appendix W, Subsection 8.2.3.c. states: "For compliance with the short-term and annual ambient standards, the nearby sources as well as the primary source(s) should be evaluated using an appropriate Appendix A model with the emission input data shown in Table 8-1 or 8-2. When modeling a nearby source that does not have a permit and the emission limit contained in the SIP for a particular source category is greater than the emissions possible given the source's maximum physical capacity to

emit, the 'maximum allowable emission limit' for such a nearby source may be calculated as the emission rate representative of the nearby source's maximum physical capacity to emit, considering its design specifications and allowable fuels and process materials. However, the burden is on the permit applicant to sufficiently document what the maximum physical capacity to emit is for such a nearby source." Table 8-2: Point Source Model Emission Input Data for NAAQS Compliance in PSD Demonstrations indicates that the appropriate emission input for nearby sources is the maximum allowable emission limit or federally enforceable permit limit.

c. Adequate documentation of the District's response is not provided.

Third, the applicant's June 28, 2010 response appears to rely in part on the fact that the San Joaquin Valley Air Pollution Control District (SJVAPCD) did not identify any sources in response to a July 19, 2007 letter requesting that the District:

> identify any stationary source located within 6 miles of the Project, having a criteria pollutant emission rate of at least 5 tons per year, and which have received construction permits but are not yet operating, or are in the permitting process (i.e., existing emission sources are accounted for in background air quality monitoring). (Footnote 3 to Avenal's June 28, 2010 letter.)

The July 19, 2007 request is limited to sources within a six mile radius, is limited to stationary sources, and excludes existing sources, and therefore is not consistent with what would be acceptable for a nearby source analysis for PSD purposes, as described in more detail above. In addition, the applicant has provided limited documentation indicating what information was included in the SJVAPCD's response, and the basis (which inventories were reviewed, for example) for SJVAPCD's response.

The applicant's June 28, 2010 response also notes that the analysis concludes, "no localized cumulative impact modeling analysis was performed for the proposed project," based on SJVAPCD's response to the letter request described above. However, the concerns stated above regarding the limited scope of the localized impacts inquiry and analysis, and the limited information provided about the District's response, apply equally to the analysis's conclusion that no localized cumulative impact modeling analysis would be performed.

d. Conclusion.

The information provided in the applicant's response concerning the Localized Impact analysis is not sufficient for EPA to determine whether all sources expected to cause a significant concentration gradient in the vicinity of the source under consideration for emission limits have been identified, consistent with EPA's *Guideline on Air Quality Models,* Subsection 8.2.3.

B. Additional Impact Analysis (or "Class II Impacts Analysis")

As further support for its approach to addressing nearby sources in response to EPA's comment, Aveng's June 28, 2010 response states, "In March 2009, a special study was made in response to the EPA Region 9 request to conduct a Class II impacts analysis. That study included an additional search for other sources of significance (i.e., excluding farm machines and rural roads) and potentially sensitive areas within the surrounding Class II region." Avenal also provides the Additional Impact Analysis as a reference for this study. However, Avenal's Additional Impact Analysis provides no discussion or documentation of any search for nearby emission sources. Further, its conclusions regarding the project's impact area in the context of the annual NO2 standard are inapplicable to the 1-hour NO2 standard, as discussed below.

1. Applicant's June 28, 2010 response.

The applicant's June 28, 2010 response states, "In March 2009, a special study was made in response to the EPA Region 9 request to conduct a Class 11 impacts analysis. That study included an additional search for other sources of significance (i.e., excluding farm machines and rural roads) and potentially sensitive areas within the surrounding Class II region. The results of that study were that:

- the project has no 'impact area' as defined by EPA guidance; and
- no potentially sensitive state or federal parks, forests, monuments, or recreation areas are located within 50 km in this rural part of the Central Valley."

2. Discussion of applicant's response.

The applicant's reference to its Class II impacts analysis (Additional Impact Analysis) does not demonstrate that it has followed a technically adequate process for identifying all sources expected to cause a significant concentration gradient in the vicinity of the source under consideration for emission limits, which should be explicitly modeled, in the context of the PSD program. The Class 11 impacts analysis does not fully address all the factors germane to the identification of nearby sources in the context of PSD modeling, as explained below.

a. The Additional Impact Analysis does not provide information on nearby sources.

First, the applicant's response indicates that as part of its Additional Impact Analysis, [1] the applicant performed an additional search for other sources of significance. However, the applicant's Additional Impact Analysis includes no discussion or documentation of any search for nearby emission sources.

'We note that the Additional Impact Analysis, submitted as an attachment to the applicant's June 28, 2010 response, was originally prepared to address federal regulatory requirements, rather than as a special study.

b. The impact area discussed in the Additional Impact Analysis does not apply to the 1-hour NO2 standard.

Second, the applicant's response states that "Nile results of that study were that the project has no 'impact area' as defined by EPA guidance." While it is correct that the project has no impact area for the annual NO2 standard, that does not hold true for the 1-hour NO2 NAAQS, because the "no impact area" conclusion for the annual NO2 standard was based on the fact that the project impact was below the significant impact level (SIL) for the annual NO2 NAAQS, and this SII, does not apply for the 1- hour NO2 NAAQS. Therefore, this information does not provide information germane to the nearby source analysis for the 1-hour NO2 NAAQS.

We note that the EPA guidance document issued by EPA's Office of Air Quality Planning and Standards entitled *General Guidance for Implementing the 1-hour NO2 National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour NO2 Significant Impact Level,* dated June 28, 2010, provides a recommended interim SlL for the 1-hour NO2 NAAQS of 4 ppb.

c. Discussion of sensitive areas is not relevant to a nearby source emission discussion.

Third, the applicant's response also indicates that no potentially sensitive state or federal parks, forests, monuments, or recreation areas are located within 50 km in this rural part of the Central Valley. This information addresses potentially sensitive areas and does not provide information regarding nearby emission sources.

d. Conclusion.

The information provided in the applicant's response concerning the Additional Impact Analysis is not sufficient for EPA to determine whether all sources expected to cause a significant concentration gradient in the vicinity of the source under consideration for emission limits have been identified, consistent with EPA's *Guideline on Air Quality Models,* Subsection 8.2.3.

1I. Paragraph 2

Avenal's paragraph 2 refers to the statement made on the first page of EPA's June 15, 2010 letter that "[k]ey input data used in the PVMRM option within AERMOD needs to be discussed and justified."

The information provided in paragraph 2 in Avenal's June 28, 2010 letter discusses the use of the ozone data submitted by Avenal in the PVMRM option within AERMOD, but does not provide adequate justification for use of the ozone data in this context for purposes of the PSD program. In addition, other key input data used in the PVMRM option within AERMOD, such as stack gas NO2/NOx ratios, need to be

discussed and justified. These issues are discussed in greater detail in the responses to paragraphs 6 and 12 below.

Avenal's response indicates that Avenal previously provided the ozone data at issue to EPA in Avenal's application for its PSD permit. However, EPA did not have any basis to review the use of the data at that time, as the annual NO2 NAAQS analysis that was submitted to meet PSD requirements did not use site-specific ozone data. The AFC prepared for the State air permitting process and cited by Avenal in its June 28, 2010 response states on page 6.2-61 that, "Annual NOx impacts were converted to NO2 using the EPA-guidance Ambient Ratio Method and the nationwide default conversion ratio of 0.75 for the annual average NO2/NOx ratio." The federal PSD requirements for the annual NO2 NAAQS analysis were met by using an acceptable method, the Ambient Ratio Method. The nationwide default conversion ratio of 0.75 is not site-specific, and does not rely on site-specific monitored ozone data. As a result, no ozone data was used for this analysis.

The AFC also includes an analysis for the State 1-hour NO2 standard, which concludes that the total impact for 1-hour NO2 (maximum facility impact and background) is 327.2 µg/m3, shown on Table 6.2-31, Modeled Maximum Project Impacts, Avenal AFC, page 6.2-66. While the use of the non-regulatory-default PVMRM option in AERMOD and use of the hourly ozone data from the Hanford, CA monitoring station for this analysis was discussed on pages 6.2-60 and -61 of the AFC, this was not part of the PSD annual NO2 NAAQS analysis, and therefore was not reviewed or approved by EPA. At the time the AFC data was provided, EPA had no reason for considering, and did not consider, the appropriateness of the use of the ozone data for an analysis relating only to the State's 1-hour NO2 standard.

Paragraph 2 in Avenal's June 28, 2010 letter also states thar[t]he regulatory requirement of representativeness was satisfied by the District's selection of the Hanford monitoring station as being the closest, and adequately close, source of the hourly ozone data. The use of air quality and meteorological data from Hanford, which is 28 miles northeast of the project site, was discussed in Sections 2.4 (Data Requirements — Meteorological Data) and 2.5 (Data Requirements Ambient Monitoring Data) in the May 13, 2010 *Supplemental NO2 Air Quality Impact Analysis,* and also discussed in AFC Sections 6.2.1.2 (Climate and Meteorology) and 6.2.3 (Existing Air Quality), Subsection 6.2.3.1 (Ozone). There are no developed stationary sources of air pollution between Hanford and the project except for the Lemoore Naval Air Station, which is located 14 miles northeast of the project." [footnotes omitted]

The statements that the source is 28 miles northeast of the project site, is the closest source, and is adequately close, are not sufficient to show that the data is representative. The discussion of representativeness for ambient air quality data should be specific to the pollutant for the appropriate averaging time. For example, the discussion of representativeness for hourly ozone data in the San Joaquin Valley should consider the regional pattern of ozone in the San Joaquin Valley. The effect of local sources on the formation and destruction of ozone should be considered. For example, is

the monitoring station near a roadway that may be a local sink of ozone? Conditions at the project site should be compared to conditions at monitoring sites in the San Joaquin Valley.

III. Paragraph 3

Paragraph 3 in Avenal's June 28, 2010 response addresses the statement on the first page of EPA's June 15,2010 letter that "documentation and justification of the appropriateness of the meteorological and ambient air quality background data for the 1-hour NO2 analysis needs to be provided."

A discussion of the documentation and justification of the appropriateness of the meteorological and ambient air quality background data for the 1-hour NO2 analysis provided in the applicant's June 28, 2010 response is included in EPA's response to paragraphs 10 and 11 below.

IV. Paragraph 4

EPA has reviewed Avenal's response to EPA's Comment 2 regarding the need to provide documentation of the source emission input data for averaging times appropriate for the federal 1-hour NO2 standard. The applicant has referenced these values in the FDOC, which was provided as an attachment to the response. These data were updated following Avenal's submission of its original PSD application, as described below.

With respect to short-term, hourly emission rates for NOx, the applicant noted the need to update the originally estimated rates for normal operations from the CTG + HRSG hourly rates of 13.47 lbs/hr (without duct firing) and 17.13 lbs/hr (with duct firing) to 13.55 lbs/hr and 17.20 lbs/hr, respectively, for the purposes of establishing our PSD permit limits equivalent to 2.00 ppm NOx. The applicant has referenced these values in the FDOC, which was provided as an attachment to the response.

In addition to the update of the hourly rate of the CTG+HRSG, an update was made for the natural gas-fired emergency generator. The update was a reduction in the emission rate for NOx (grams per brakehorsepower-hour, or g/bhp-hr) for the natural gas-fired emergency generator (which remained the same size) from 1.50 to 1.00 g/bhp-hr (equating to a revision from 2.84 lbs/hr to 1.90 lbs/hr). The emission rates for the auxiliary boiler and diesel fire pump remained the same. Below summarizes EPA's understanding of the hourly NOx emission rate (lbs/hr) for each piece of equipment.

Equipment	NOx, emissions (not to exceed)
CTG + HRSG (no duct burner)	permitted: 13.55 lbs/hr permitted: 2.0 ppm @ 15% 02
Cl'a + HRSG (with duct burner)	permitted: 17.20 lbs/hr permitted: 2.0 ppm @ 15% 02
emergency generator	permitted: 1.0 g/bhp-hr

550 kW (or 860 hp)	calculated: 1.9 lbs/hr (1.89 lbs/hr)
fire water pump 288 hp	permitted: 3.4 g/bhp-hr calculated: 2.2 lbs/hr (2.16 lbs/hr)
auxiliary boiler 37.4 MIVIBtu/hr (HHV)	permitted: 9.0 ppm @ 3% 02 calculated: 0.41 lb/hr

EPA believes that the documentation presented in Paragraph 4 is sufficient, and the emission rates presented in the table above are appropriate for addressing compliance with the federal 1-hour NO2 standard.

V. Paragraph 5

EPA has reviewed Avenal's response in paragraph 5 of its June 28, 2010 letter to EPA's Comment 3 regarding the inclusion of the startup or shutdown emissions. In addition to the information cited in footnote 24 (i.e., EPA's June 2009 Statement of Basis and Ambient Air Quality Impact Report), we acknowledge that EPA was in receipt of the initial PSD permit application information cited in footnote 25.

We understand Avenal's response to indicate that the existing information for startup and shutdown in the original PSD permit application has been proposed for the 1-hour NAAQS air quality modeling evaluation. Based on Tables 6.2-1.1, 6.2-1,6, and 6.2-2.5, we note that the 1-hour scenario is based on a combination of the following: (a) Case 4 (from vendor data) that represents 50% load and 101 degrees F; and (b) a cold start estimate of 80 lbs/hour (each), which appears to be based on a compilation of other facilities' cold start data.

Guideline on Air Quality Models (40 CFR Part 51, Appendix W, Subsection 8.1.2) Source Data recommends that for point source applications, the load or operating condition that causes maximum ground-level concentrations should be established. Where the source operates at substantially less than design capacity, and the changes in the stack parameters associated with the operating conditions could lead to higher ground level concentrations, loads such as 50 percent and 75 percent of capacity should also be modeled. The information provided to date is insufficient and should demonstrate why the parameters for the proposed 50% load and 101 degrees F case represent the worst-case 1-hour NOx scenario; i.e., why other loads (e.g., 60%, 75%) and other ambient conditions were not considered or demonstrative of the worst-case 1-hour NOx emission rate.

VI. Paragraph 6

EPA has reviewed Avenal's June 28 response to EPA's Comment 4 regarding the in-stack ratios. Avenal has selected the in-stack NO2/NOx ratio for the two combustion turbines as follows: equal to 0.25 for normal operations and equal to 0.4 for startup and commissioning operations. Avenal has characterized these ratios as conservative, as

derived from information related to the Palomar Energy Center (Palomar) in Escondido, California, a facility that operates within the San Diego Air Pollution Control District (SDAPCD). Avenal did not provide the specific background information cited for EPA in support of the selection process. Avenal stated that the ratios were "derived from source test data." EPA needs to confirm the proposed conservative ratios for use in the 1-hour NO2 NAAQS air quality modeling; therefore, we request the following:

A, Source Test Operating Scenarios and Results: The applicant should provide the source test data, which the SDAPCD furnished, that Avenal has relied upon to develop the 0.25 and 0.40 ratios. This should include, at a minimum, source test results, source test support information to confirm test conditions and equipment operations, and the source test methodology. The applicant should confirm if the source test data relied upon is a result of emissions compliance testing or a result of other circumstances. Based on this information, the applicant should provide a discussion that demonstrates the representativeness and comparability of this information for Avenal's selection of the proposed ratios for normal, startup and commissioning operations.

B. Other Support Information (if applicable): We are not aware that source tests have generally been conducted during the startup and commissioning phases of operations specific for the collection of information to determine the in-stack NO2/NOx ratio. If the development of the normal, startup, and commissioning ratios also were based on another method(s) other than source testing, the applicant should provide the information that Avenal has relied upon. For instance, if continuous emissions monitoring also was relied upon, please provide a discussion that also demonstrates the representative arid comparability of this information for Avenal's selection of the proposed ratios.

C. San Diego APCD Recommendations: Avenal stated that the proposed in-stack ratio values of 0.25 and 0.4 were "... recommended by San Diego Air Pollution Control District for the modeling on another large-scale combined-cycle gas turbine project." The applicant should include the SDAPCD's recommendation and rationale.

VII. Paragraph 7

EPA recognizes that detailed guidance regarding dispersion modeling for demonstrating compliance with the 1-hour NO_2 NAAQS was limited at the time of Avenal's May 13, 2010, submittal. Additional guidance was issued on June 28, 2010, in the form of a clarification memorandum on the *Applicability of Appendix W Modeling Guidance for the 1-hour NO2 National Ambient Air Quality Standard.* The first paragraph on page 5 of this NO_2 clarification memorandum addresses the question of appropriate methods for combining modeled ambient concentrations with monitored background concentrations for comparison to the NAAQS in a cumulative analysis. The memorandum states that *"[a] 'first tier' assumption that may be applied without further justification is to add the overall highest hourly background NO2 concentration from a representative monitor to the modeled design value, based on the form of the standard, for comparison to the NAAQS. Additional refinements to this 'first tier' approach based*

on some level of temporal pairing of modeled and monitored values may be considered on a case-by-case basis, with adequate justification and documentation."

Although EPA's June 28, 2010 NO2 clarification memorandum acknowledges that some level of temporal pairing of modeled and monitored NO_2 concentrations may be appropriate in some situations, the justification regarding pairing on an hour-by-hour basis provided in Avenal's response, which states that the "approach guarantees meteorological consistency for each pair of background and modeled concentrations combined in each hour of the year," does not provide a sufficient rationale to support that approach in this case. There may be sound technical arguments to account for consistency in terms of the meteorology affecting both background and modeled concentrations, but the justification also needs to consider the spatial representativeness of the monitored data as well, which is not addressed in Avenal's response to this comment.

The aspect of temporal pairing of modeled and monitored concentrations is also acknowledged in EPA's March 23, 2010 memorandum from Stephen Page regarding *Modeling Procedures for Demonstrating Compliance with PM2.5 NAAQS*, where EPA indicates on page 8 that a Second Tier approach for combining modeled and monitored PM2.5 concentrations on a seasonal or quarterly basis may be considered when the modeled primary PM2.5 impacts and background PM2.5 levels (including secondary PM2.5 formation) are not correlated on that time scale. Although the March 23, 2010 memo does not provide details regarding the recommended method for combining modeled and monitored PM2.5 concentrations on a seasonal or quarterly basis, the recent draft PM2.5 Hot Spot Conformity Guidance (EPA, 2010) recommends combining the average of the highest modeled 24-hour concentrations within each season/quarter to each of the eight highest 24-hour monitored background concentrations for that season/quarter, and then sorting the combined distribution to determine the cumulative design value (see Appendix K of the draft Hot Spot gmidance). Note that the modeled arid monitored concentrations are not paired on a day-by-day (or hour-by-hour) basis in this Second Tier approach for PM2.5, even though the spatial homogeneity of background levels of PM2.5 on a daily basis is likely to be much greater than the spatial homogeneity of background levels of NO_2 on an hourly basis.

While the background ambient monitored NO2 values, if appropriately justified, are presumed to be representative in a general sense of background concentrations for purposes of a cumulative impact assessment, pairing the monitored background values with modeled concentrations on an hour-by-hour basis implies an assumption that the monitored concentrations are equally representative at each location within the modeling domain for each hour of the simulation. There is no technical or even rational basis to support such a degree of representativeness in this case or any other case. Such a degree of representativeness would also be unreasonable to impose as a general requirement for use of background monitored data, given the limited number of monitors available. However, any modeling approach developed regarding the use of monitored background concentrations as part of a cumulative impact assessment must take into account these limitations of monitored data.

It appears that the approach used to combine hourly modeled and monitored NO_2 concentrations for comparison to the 1-hour California Ambient Air Quality Standard (CAAQS) in Avenal's AFC submittal to the CEC was consistent with the approach recommended as the "first tier" assumption for combining modeled and monitored NO2 concentrations described in the June 28, 2010, NO2 clarification memo. The results from the 1-hour NO2 CAAQS comparison summarized in Table 6.2-31 (6.2-66) of the AFC show maximum 1-hour Avenal facility impacts of 190 jig/m^3, combined with a background concentration of 137.2 tig/m^3 to give a total impact of 327.2 Win^s. This cumulative 1-hour NO_2 impact is well above the EPA 1-hour NO_2 standard, although we recognize that the 1-hour modeled NO_2 concentration documented in the AFC is likely to be higher than the 98th-percenti1e of the annual distribution of maximum daily 1-hour values used as the form of the 1-hour EPA standard. However, the AFC results are also about 2.7 times higher than the cumulative 1-hour NO_2 impact reported in the May 13, 2010 submittal, which serves to highlight the significance of the issue raised by EPA in this comment, and to emphasize the importance of having clear justification and documentation of the approach taken for combining modeled and monitored concentrations for comparison to the NAAQS.

VIII. Paragraph 8

Paragraph 8 address EPA's comment that Avenal's May 13, 2010 1-hour NO2 submittal labeled hours with missing ambient monitored background NO2 as missing for combined modeled and monitored impact, which effectively discards valid modeled data. The applicant's response states that "Although modeled concentrations are discarded when corresponding background concentrations are not available, the methodology used faithfully follows the requirements in the 1-hour NO2 NAAQS Final Rule, the only reasonably applicable regulatory guidance available at the time of this supplemental 1-hour NO2 analysis."

The procedures in Appendix S to 40 CFR Part 50, which are provided in the reference cited as "the only reasonably applicable regulatory guidance available at the time of this supplemental 1 hour NO2 analysis," apply to ambient monitored NO2 concentrations and are not relevant for modeled NO2 concentrations. EPA disagrees that it is suitable to apply the currently available monitoring guidance for the 1-hour NO2 standard to modeling applications, as suggested by Avenal.

The applicant's response states that "EPA's suggestion that we should rely on guidance that has yet to be issued would appear unreasonable in light of the suitability of the currently available guidance with respect to monitoring compliance with this NO2 standard by states." EPA's comment objects to discarding valid modeled data. The applicant should choose a method for combining modeled and monitored data that does not discard valid modeled data and which is consistent with Appendix W. EPA's guidance entitled *Applicability of Appendix W Modeling Guidance for the 1-hour NO2 National Ambient Air Quality Standard* (June 28, 2010) may be useful in preparing an analysis of the 1-hour NO2 NAAQS.

EPA believes that its objection that the Avenal's May 13, 2010 1-hour NO2 submittal labeled hours with missing ambient monitored background NO2 as missing for combining modeled and monitored impact, which effectively discards valid modeled data, has not been adequately addressed.

IX. Paragraph 9

Paragraph 9 in Avenal's June 28, 2010 response addresses Comment 6 in Attachment A to EPA's June 15,2010 letter, which states: "Avenal's May 13, 2010 1-hour NO2 submittal did not include any discussion of how building downwash is addressed."

We have reviewed the approach Avenal has taken for addressing building downwash, as described in its response, and believe that this approach is acceptable for Avenal's 1-hour NO2 NAAQS analysis.

X. Paragraph 10

Paragraph 10 in Avenal's June 28, 2010 response refers to Comment 7 in Attachment A to EPA's June 15, 2010 letter, which describes in detail the type of analysis that EPA guidelines indicate is appropriate to demonstrate the representativeness of the meteorological data. Although Avenal did provide some information regarding the surface meteorological station, the applicant's response does not fully address several of the issues raised in EPA's Comment 7, described as follows. Paragraph 3 in Avenal's June 28, 2010 response also addresses this issue, and refers to previous submittals that are based on the same material that is presented in paragraph 11, but does not provide additional information regarding the representativeness of the data.

EPA's Comment 7 states, "This analysis should include a discussion of the representativeness of the surface characteristics. The surface characteristics input to AERMET should be based on the land cover characteristics in the vicinity of the meteorological tower." The information in Avenal's response states that "Whe surface characteristics appropriate for the land uses surrounding the meteorological station at Hanford—namely surface roughness length, albedo, and Bowen Ratio—were computed by the District." The information provided in the response does not adequately address EPA's comment. The response does not provide (1) information about the surface characteristics at the project site, (2) specific information about the surface characteristics for the meteorological station that were computed by the District, or (3) a discussion of how the specific surface characteristics at the meteorological station are representative of the specific surface characteristics at the project site. Avenal should provide this information.

EPA's Comment 7 also states that "[Other candidate meteorological stations should be discussed." No other candidate meteorological stations are discussed in Avenal's June 28, 2010 response.

EPA's Comment 7 further states that ftlhe representativeness of the upper air station used for this analysis should be discussed." Avenal's June 28, 2010 response states, "The District's proposed Camp Pendleton meteorological data are representative of conditions at the project site," and "Nepresentativeness is best evaluated when sites are climatologically similar, as are the project site and the Camp Pendleton meteorological monitoring station." However, the response does not provide an analysis supporting the conclusion that the project site and the Camp Pendleton meteorological monitoring station the project site are climatologically similar; this analysis should be provided.

Paragraph 10 in Avenal's June 28, 2010 response provides some information regarding the surface meteorological station. However, the following portion of EPA's Comment 7 was not addressed: "Mince the spatial scope of each variable could be different, representativeness should be judged for each variable separately. For example, for a variable such as wind direction, the data may need to be collected very near plume height to be adequately representative, whereas, for a variable such as temperature, data from a station several kilometers away from the source may in some cases be considered to be adequately representative." Avenal should address this issue in its analysis.

XL Paragraph 11

Comment 8 in Attachment A to EPA's June 15, 2010 letter states that "Avenal's May 13, 2010 1-hour NO2 submittal did not include any analysis showing the representativeness of air quality data at the Hanford site with respect to the conditions at the project. The submittal should include the appropriate analysis, and other candidate ambient air quality monitoring stations should be discussed." In response, Avenal's June 28,2010 letter refers to previous submittals Avenal has made, but these submittals do not provide an adequate analysis, as explained in more detail below. Paragraph 3 in Avenal's June 28, 2010 response also addresses this issue, and refers to previous submittals that are based on the same material that is presented in paragraph 11, but does not provide additional information regarding the representativeness of the data.

A. NO2 data representativeness has not been adequately justified for the 1-hour NAAQS.

1. Summary of information presented in paragraph 11 of Avenal's June 28 response for representativeness of NO2 data.

Paragraph 11 in Avenal's June 28 response first refers to Avenal's May 13, 2010 *Supplemental NO2 Air Quality Impact Analysis* submittal, Section 2.5 (Data Requirements — Ambient Monitoring Data) on pages 6 and 7, which states:

> Ambient NO2 data collected during the five-year modeling period of 2000-2004 at the Hanford monitoring station were used to characterize the representative ambient background concentrations. The ambient pollution levels monitored at

> the Hanford monitoring station represent area-wide ambient conditions rather than the localized impacts of any particular facility due to the lack of any large local industrial sources in the Hanford area.

Avenal also refers to Section 6 (Existing Ambient Air Quality Data) of the modeling protocol submitted to EPA Region 9 in August 2007. The representativeness justification presented in the protocol is limited to the fact that the Hanford monitoring site is nearest to the facility. The protocol states at Section 6:

> 6. EXISTING AMBIENT AIR QUALITY DATA
> Background ambient air quality data for the project area during 2004-2006 will be obtained from the following monitoring sites that are nearest to the project site by pollutant:
> • Hanford-South Irwin Street: 03 and NO2

2. The justification for representativeness of the NO2 data presented in Avenal's June 28 response is not adequate for the 1-hour NO2 NAAQS.

The discussion on representativeness presented by Avenal and described above, i.e., that there is a lack of any large local industrial sources in the Hanford area, and that the Hanford site is nearest to the facility, is not an adequate discussion of representativeness. The discussion of representativeness for ambient air quality data should include a discussion of why the ambient pollution levels monitored at the Hanford monitoring station represent area-wide ambient conditions, not simply that they do not represent localized impacts. The discussion should be appropriate for the pollutant for the appropriate averaging time. For example, the discussion of representativeness for hourly NO2 data in the San Joaquin Valley should include a discussion of the sources and conditions likely to contribute to high hourly levels of NO2 in the San Joaquin Valley. The project site should be compared to various monitoring sites in the San Joaquin Valley. This type of information has not been provided.

3. NO2 data were not previously reviewed or approved by EPA for the 1-hour NO2 NAAQS.

The NO2 data Avenal proposes to use for the 1-hour NO2 NAAQS analysis were not used in the air quality analysis for the annual NO2 NAAQS conducted for Avenal's PSD permit. Because the impact for the facility was below the significance level for the annual NO2 standard, the applicant did not conduct a full cumulative NAAQS analysis, which uses background monitoring data, for the annual NO2 NAAQS. "These comparisons show that, except for 1-hour CO, the maximum potential impacts are below the significant impact levels and no further analysis is required." (See Avenal AFC 6.268).

As noted by the AFC (6.2-64, Table 6.2-28 Evaluation of Preconstruction Monitoring Requirements), the Avenal Energy Project avoided preconstruction monitoring for the annual NO2 standard, in part, for a different reason: the predicted air

quality impacts of the project would not exceed defined *monitoring de minimis* levels known as significant monitoring concentrations. These *de minimis* levels do not apply to the 1-hour NO2 NAAQS.

The NO2 ambient data used for the annual NO2 NAAQS analysis were not evaluated by EPA in that context in light of the fact that the analysis did not use ambient NO2 data, and the fact that the analysis had a project impact below the monitoring *de minimis* level. These factors are not present in the context of the 1-hour NO2 NAAQS. Thus, EPA did not review or approve the information submitted at that time with respect to representativeness for the 1-hour NO2 NAAQS.

Avenal also refers to Section 6 (Existing Ambient Air Quality Data) of the modeling protocol submitted to EPA Region 9 in August 2007. This protocol was not reviewed at that time for the 1-hour NO2 NAAQS because that standard did not exist at the time.

B. Ozone data representativeness for use with the non-regulatory-default PVMRM option in AERMOD has not been adequately justified for the 1-hour NO2 NAAQS.

I. Summary of information presented in paragraph 11 of Avenal's June 28 response for representativeness of ozone data.

Avenal refers to Section 6 (Existing Ambient Air Quality Data) of the modeling protocol submitted to EPA Region 9 in August 2007. The protocol states at Section 6:

> 6. EXISTING AMBIENT AIR QUALITY DATA
> Background ambient air quality data for the project area during 2004-2006 will be obtained from the following monitoring sites that are nearest to the project site by pollutant:
> • Hanford-South Irwin Street: 03 and NO2

The representativeness justification presented in the protocol is limited to the fact that the Hanford monitoring site is nearest to the facility.

2. Ozone data representativeness has not been adequately justified by Avenal.

The discussion of representativeness for ambient air quality data should be appropriate for the pollutant and averaging time. For example, the discussion of representativeness for hourly ozone data in the San Joaquin Valley should consider the regional pattern of ozone in the San Joaquin Valley, as well as local sources and sinks of ozone. Conditions at the project site should be compared to conditions at monitoring sites in the San Joaquin Valley.

3. Ozone data was not previously reviewed or approved by EPA for the 1-hour NO2 NAAQS.

EPA has not previously reviewed the ozone data included in the AFC. The Avenal AFC itself indicates that ozone data was not used in the annual NO2 analysis. The "Annual NOx impacts were converted to NO2 using the EPA-guidance Ambient Ratio Method and the nationwide default conversion ratio of 0.75 for the annual average NO2/NOx ratio."[2] The federal requirements for the annual NO2 NAAQS analysis were met by using an acceptable method, the Ambient Ratio Method. The nationwide default conversion ratio is not site-specific and does not rely on site-specific ozone data. Thus, there was no reason for EPA to review and approve the ozone data in the context of the annual NO2 analysis.

Avenal's June 28 response also states that "EPA refers to the modeling use of 03 and NO2 background monitoring air quality data in Section 8.1 (Background Ambient Air Quality and Conditions) on page 24 of the June 2009 *Statement of Basis and Ambient Air Quality Impact Report For a Clean Air Act Prevention of Signcant Deterioration Permit* without any qualifying comment." EPA did not review or approve the information submitted at that time with respect to representativeness for the 1-hour NO2 NAAQS; the 1-hour NO2 NAAQS did not exist at that time.

Avenal also refers to Section 6 (Existing Ambient Air Quality Data) of the modeling protocol submitted to EPA Region 9 in August 2007. This protocol was not reviewed at that time for the 1-hour NO2 NAAQS because the Federal 1-hour NO2 standard did not exist at the time.

C. Conclusion

Avenal still needs to provide an acceptable analysis showing the representativeness of air quality data at the Hanford site with respect to the conditions at the project in the context of the 1-hour NO2 NAAQS.

XII. Paragraph 12

Paragraph 12 refers to Comment 9 in Attachment A to EPA's June 15, 2010 letter, which states that Tiflis method for substituting missing 03 concentrations should be replaced with a clearly defined approach that includes a reasonable assurance that substituted values will not result in underestimates of ambient NO2 concentrations."

Avenal's June 28, 2010 response does not adequately address EPA's comment. EPA did not suggest that Avenal should laktificially reducfel the substituted concentrations to artificially increase the resulting 1-hour NO2 concentration." Rather, EPA stated that Avenal should provide a "reasonable assurance that substituted values will not result in underestimates of ambient NO2 concentrations." Avenal has not provided reasonable assurance that the method used -- substituting concentrations with "hour—appropriate" values (e.g., from the previous day, or the next day, for the same

[2] Avenal Energy AFC 6.2-64)

hour) -- will not result in underestimates of ambient NO2 concentrations. For example, Avenal has not indicated whether there were instances in which there were "hour-appropriate" data for both the day before and day after the date on which data was missing, and whether in any such cases it took the higher of the two values.

Avenal states that the information it is relying on was submitted previously to EPA without comment from EPA. The fact that Avenal may have provided the approach it is now proposing to use for the 1-hour NO2 NAAQS in submittals to EPA that preceded the issuance of this standard does not mean that EPA has accepted this approach. EPA has not previously reviewed or approved any method suggested by Avenal for substituting missing 03 concentrations for the 1-hour NO2 NAAQS.

Nor did EPA approve this method in the context of the annual NO2 NAAQS. The PSD requirements for an analysis of the annual NO2 NAAQS analysis were met by using the Ambient Ratio Method, using the nationwide default conversion ratio, which is not site-specific and does not rely on site-specific ozone data.[3] Accordingly, EPA's June 2009 *Statement of Basis and Ambient Air Quality Impact Report For a Clean Air Act Prevention of Significant Deterioration Permit,* was based on the Ambient Ratio Method and the nationwide default conversion ratio of 0.75 for the annual average NO2/NOx ratio, which does not rely on ozone data. Therefore, EPA would have had no basis for examining a method for substituting missing ozone data in the context of the annual NO2 NAAQS analysis.

Ozone data was discussed in information regarding the PVMRM option described in the AFC, which was used to meet State requirements for modeling for the California 1-hour NO2 standard. The results of that analysis indicate that the total 1-hour NO2 impact is 327ug/e. This analysis was not part of the PSI) analysis, and therefore was not reviewed or approved by EPA, and the appropriateness of the ozone data for this use was not reviewed by EPA.

EPA's Response to Avenal's July 13, 2010 Letter and Its Attachment

Avenal's July 13, 2010 letter provides some additional information regarding the adequacy of Avenal's analysis in meeting the 1-hour NO2 NAAQS. Many of the responses in the July 13 letter reiterate that these issues were addressed in Avenal's August 2007 protocol.

Avenal's response on page 4 of the attachment to its July 13, 2010 letter provides additional information regarding stack NO2/NOx ratios. EPA has considered this information in its response to paragraph 6 of the June 28, 2010 letter, which is presented above.

[3] . Page 6.2-61 of the AFC states "Annual NOx impacts were converted to NO2 using the EPA-guidance Ambient Ratio Method and the nationwide default conversion ratio of 0.75 for the annual average NO2/NOx ratio."

Avenal's response on page 5 and 6 of the attachment to its July 13, 2010 letter addresses 40 CFR Part 51, Appendix W, paragraph 3.2.2(e), regarding the use of alternative models. In response, with respect to the various provisions in paragraph 3.2.2(e), EPA believes that:

Provision i. The model has received a scientific peer review: This provision is adequately addressed.

Provision ii. The model can be demonstrated to be applicable to the problem on a theoretical basis:

This provision is not adequately addressed. That the project is located in an area of high ozone concentrations does not necessarily justify the use of PVMRM, nor does it necessarily imply a particular bias or lack of bias in the results.

Provision iii. The data bases which are necessary to perform the analysis are available and adequate:

We do not agree this provision is adequately addressed, for the reasons discussed in our responses above to paragraphs 2, 6, 11, and 12 of the June 28,2010 letter.

Provision iv: Appropriate performance evaluations of the model have shown that the model is not biased toward underestimates:

This provision is adequately addressed.

Provision v: A protocol on methods and procedures to be followed has been established: This provision is not adequately addressed, and was not approved in the previous submittals. Please provide a protocol that is consistent with the comments stated above.

EPA Comments / District Response

The comments (from Gerardo Rios) regarding the Preliminary Determination of Compliance for Avenal Power Center LLC (District facility C-3953) is encapsulated below followed by the District's response.

EPA Comments — Letters Dated September 13,

2010 EPA Comment #1:

Applicable federal requirements include thresholds for defining ,a major source of criteria pollutant emissions. For those sources where emission estimates and/or emission limits are relatively close to the federal thresholds, EPA encourages the following: (a) refinement of emissions and compliance demonstration methods that would ensure the thresholds would not be exceeded, and/or (b) a 5-10% buffer between the permitted emission limits and the federal threshold.

The proposed annual NOx emission and CO emission limits are within a margin of less than 5% of the federal annual threshold limit for defining a new major stationary source under the Federal Prevention of Significant Deterioration (PSD) permit program. The threshold is 100 tons per year (tpy) each. If the limits of these pollutants are relaxed, the facility may be subject to the applicable federal requirements, such as the Federal Prevention of Significant Deterioration (PSD) permitting program (See 40 CFR Part 52.21 (r)(4)).

District's Response:

The permitted emissions from this facility are below PSD thresholds. The facility's NOx and CO emissions limits are included as permit conditions on the PDOC. The facility is also required to maintain records to demonstrate that they do not exceed these emission limits.

In addition, emissions from the turbine units are monitored with a CEMS system. The CEMS system continuously monitors the emissions from the turbine units and reports any exceedance of the permitted emissions rates to the District. These notifications are received on a daily basis. The emissions from the turbine units are also required to be compiled on a daily basis. The monitoring and reporting requirements in the PDOC are more than sufficient to assure compliance with the annual emissions limitations. No changes are being made to address this comment.

EPA Comment #2:

In the "General Calculations" section (See PDOC Page 27, Section VII. C. 5), the District compares the annual emission estimates for regulated pollutants to the major source threshold to determine whether a pollutant is subject to major source requirements for NOx, CO, VOC, PM_{10}, and SOx emissions. However,

$PM_{2,5}$, which also is a regulated pollutant, is not included. On May 8, 2008 EPA finalized regulations to implement the NSR program for $PM_{2.5}$. A source that emits or has the potential to emit 100 tpy or more PM2.5 in a nonattainment area is defined as a major stationary source. (Reference 40 CFR Part 51, Appendix S.) We recommend the District include in its evaluation the $PM2._5$ emission estimates with a comparison to the federal nonattainment major source threshold of 100 tpy (or 200,000 pounds per year).

District's Response:

The potential emissions of P11/110 from the facility are 161,552 lb-PMp/year (Calculated in the PDOC). Using the conservative assumption that all P11410 is $PM2._5$, it/s clear that the PM2.5 emissions from this facility will not exceed the major source threshold of 100 tons/year. However, to avoid any confusion, the District will revise the PDOC to discuss the potential emissions of PM_{25} from this operation.

EPA Comment #3:

The proposed annual emissions (calculated on a twelve consecutive month rolling basis) from the facility are 198,840 pounds per year (lb/yr) NOx and 197,928 lb/year CO. (See PDOC Page 27, Section VII. C. 5) These annual emissions are equivalent to 99.4 tpy of NOx emissions and 98.9 tpy of CO emissions, both of which are relatively close to the federal PSD permit program applicability threshold of 100 tpy for each ofthese pollutants. A proposed permit condition requiring that annual emissions not exceed these levels has been added to all combustion related equipment. The condition reads as follows:

> *"Annual emissions from the facility, calculated on a twelve month rolling basis, shall not* exceed *any of the following limits: NOx (as NO2) -198,840 lb/year;* CO *-197,9281b/year."*

In a review of the post-project potential to emit annual emission estimates in Sections VII.C.2.i through C.2.iv. (See PDOC Pages 16-26) for each piece of equipment, we noted that the combustion turbine operations contribute the majority of NOx and CO emissions.

Based on discussions with the District, we understand that in addition to the 12-month rolling facility NOx and CO emission limits that are equivalent to 99.4 tpy and 98.9, respectively, the District has made no other changes to the current FDOC permit conditions. These conditions include, but are not limited to, the following: continuous emissions monitoring of NO and CO; compilation of emissions on a daily, monthly, 12 consecutive month rolling average, and annual basis; quarterly reporting of excess emissions; and acid rain (40 CFR Part 75) compliance requirements.

At this time, it appears the proposed requirements provide practically and federally enforceable conditions based on our understanding of the proposed revision. However, given that the NOx permit limit is within less than 1% of the PSD permit threshold and the CO limit is within 1.1% of the PSD permit threshold, we suggest that the District consider requiring Avenal to report more frequently emissions as the actual emissions approach or exceed 90% of the 12-consecutive month rolling average permit limit to assure the 100 tpy threshold is not exceeded.

Districts Response:

Emissions from the turbine units are monitored with a GEMS system. The CEMS system continuously monitors the emissions from the turbine units and reports any exceedance of the permitted emissions rates to the District. These notifications are received on a daily basis. The emissions from the turbine units are also required to be compiled on a daily basis. The monitoring and reporting requirements in the PDOC are more than sufficient to assure compliance with the annual emissions limitations. No changes are being made to address this comment.

EPA Comment #4:

The District concludes on pp. 53-54 of the PDOC that the proposed project will not cause a violation of an air quality standard for NOx, and refers to Appendix G. PDOC Appendix G contains some additional detail on the air quality impact analysis for the I-hour NO2 NAAQS, effective April 12, 2010, and states that "the emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS." The following are our comments specific to PDOC Appendix G:

a. S1P-Approved Rule 2201 -The District's approved SIP, in District Rule 2201, Section 4.14,1, provides that modeling used for purposes of determining whether a new or modified stationary source's emissions will cause or make worse the violation of an Ambient Air Quality Standard shall be consistent with the requirements contained in the most recent edition of EPA's "Guideline on Air Quality Models." This EPA guideline is found in 40 CFR Part 51, Appendix w. EPA recently has had occasion to review and comment on the applicant's I-hour NO2 NAAQS analysis for the project in the context of the applicant's pending PSD permit application before EPA.

   We recognize that certain aspects of the project for which Avenal seeks a minor source permit vary from the project for which it seeks a PSD permit, in particular, the proposed addition of a facility-wide NOx emissions limit of the equivalent of approximately 99.4 tons per year (tpy) to the minor source permit. However, given that the equipment emitting NOx from the

two projects has the same permitted hourly emission rates, many of the comments EPA made concerning consistency with 40 CFR Part 51, Appendix W in reviewing the applicant's l-hour NO2 NAAQS analysis for PSD purposes may be relevant to the I-hour NO2 NAAQS analysis for this minor source permit as well. We have attached for your consideration our comments dated June 15, 2010 and August 12, 2010 on the l-hour NO2 NAAQS analysis that Avenal submitted to EPA for PSD purposes. We would be happy to discuss any issues or questions you may have concerning these comments.

b. EPA Guidance Memorandum -We also note that EPA recently issued guidance relating to modeling for the I-hour NO2 NAAQS, with a cover memorandum entitled *Guidance Concerning Implementation of the 1-hour NO2 NAAQS for the Prevention of Significant Deterioration Program,* dated June 29, 2010, that included two attached guidance documents, one of which was entitled *Applicability of Appendix W Modeling Guidance for the 1-hour NO2 National Ambient Air Quality Standard,* dated June 28, 2010. We understand that the District is aware of this guidance, and we encourage the District to refer to this guidance for further detail on this subject.

c. Assumptions and Decision-making Process -The District's rationale in Appendix G for its conclusion that the project's emissions will not cause or contribute significantly to a violation of the l-hour NO2 NAAQS is not clear from the documents provided. For example, the table addressing "Operational" scenarios on page 2 of Appendix G indicates that Tier 1 and Tier 2 impacts are each greater than the NO2 NAAQS limit, while Tier III and Tier. IV impacts are each below the NO2 NAAQS limit. Furthermore, it is unclear how the modeling analysis meets the requirements of Appendix W (See Comment 4.a.) or whether the District intended to follow those requirements for the proposed permit revision. We recommend that the District provide a discussion of which Tier the District is relying upon to support its conclusion, the basis for selecting that Tier, and the modeling inputs, assumptions, etc. for that Tier.

District's Response:

a. *The District has reviewed your comments dated June 15, 2010 and August 12, 2010 on the• 1-hour NO2 NAAQS analysis that Avenal submitted to EPA for PSD purposes, and has no comments at this time. We did not use Avenel Power's analysis to make determinations of NAAQS impacts, but used our own guidance to perform the NO2 modeling (please see responses below).*
b. *The District has reviewed the documents stated above and developed a modeling guidance to address EPA's memos that were provided to the modelers at EPA Region 9. The District is currently waiting for EPA's*

response to this guidance, and is, in fact, working with EPA, ARB, and CAPCOA on developing statewide policy on how to implement our guidance, or something similar. The Avenel Power project was analyzed under this guidance, and the project was approved under Tier Ill of that guidance.

c. *The District uses a tiered approach when determining compliance with any NAAQS. This approach is similar to that required by OAQPS in their memos which require that* each *progressively more accurate tier be used (Tier I-Complete ConversiOn, Tier 11-NO2 Ration and Tier 111-OLM) until compliance is demonstrated. This project was approved under Tier Ill. We believe our guidance is consistence with EPA modeling practices and direction, and as we have stated above, we are patiently awaiting EPA's input on our guidance.*

EPA Comment #5, Joint letter to District and Avenel Power Center, LLC:

Avenal Power Center, LLC (Avenal) recently applied for a minor source New Source Review (NSR) permit from the San Joaquin Valley Pollution Control District (SJVAPCD or District) for the Avenal Energy Project. This permit seeks authority to construct the project with emissions limits below the major source thresholds triggering Clean Air Act (CAA) prevention of significant deterioration (PSD) preconstruction review. On July 28, 2010, SJVAPCD's public notice announcing its Preliminary Determination of Compliance for this minor source permit application was published in the Fresno Bee, triggering a public review and comment period for the proposed permit.

Concurrently, Avenal is seeking a PSD permit from EPA Region 9 for essentially the same project, but with greater emissions exceeding the major source threshold and thereby triggering PSD preconstruction review. The applicant's simultaneous application for both a minor source permit and a major sauce PSD permit for the project raises a potential concern about circumvention of PSD preconstruction requirements.

EPA guidance on this subject states:

> Parts C and D of the Clean Air Act exhibit Congress's clear intent that new major sources of air pollution be subject to preconstruction review. The purposes for these programs cannot be served Without this essential element. Therefore, attempts to expedite construction by securing minor source status through receipt of operational restrictions from which the source intends to free itself shortly after operation are to be treated as circumvention of the preconstruction review requirements... If a major source or major modification permit application is filed simultaneously with or at approximately the same time as the minor source construction permit, this is strong evidence of an intent to circumvent the requirements of preconstruction review.

Guidance on Limiting Potential to Emit in New Source Permitting, Terrell E. Hunt and John S. Seitz, dated June 13, 1989, at pp. 13-14.

We recommend that the applicant carefully review the guidance quoted above and other applicable EPA guidance on this topic prior to commencing construction of the project under the minor source permit, should that permit be finalized by the SJVAPCD.

District's Response:

The District disagrees that if Avenel were to construct under a California Energy Commission license that incorporates this• minor source Determination of Compliance (DO C), it would be circumvention of the PSD preconstruction review.

Circumvention might occur if a source obtained a minor source permit and soon the sought a PSD permit due to a small increase in emissions, and not as a new source. In this case, Avenel has applied for a PSD permit as a new source. if they construct as a minor source and don't receive a PSD permit, they will have to continue to comply with the minor source limits. However, constructing as a minor source and then obtaining a PSD permit as a new major source and operating in accordance with that PSD permit cannot be viewed as circumvention. Therefore, the EPA process, not the District's minor source permitting process, will determine whether circumvention will occur, and circumvention will not occur if EPA requires a PSD permit if Avenal pursues a permit with emissions above the PSD triggers.