



File Code: 2580

Date: March 1, 2007

Mr. Mike Mills
Senior Manager, General Commercial and Energy Team
Engineering and Compliance Division, South Coast Air
Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4178

Dear Mr. Mills,

The City of Vernon is proposing to add new generating capacity to allow it to meet 100 percent of the local city demand. The city already owns and operates other nearby power generating equipment. They are proposing to construct a new 943-MW natural gas-fired, combined-cycle electric generating facility within the city boundary.

This is one of several already built or proposed power plants using this new and very clean natural gas turbine technology. However, Class I areas in Southern California are currently experiencing varying degrees of visibility degradation, and although the operating scenarios exceed the Federal Land Managers' Air Quality Related Values Workgroup (FLAG) thresholds on some days, these calculations are considered robust and conservative. It is, for this reason we are recommending that this application be approved with a condition of PSD monitoring. We are proposing the use of language like that below be included in permit issued by your agency:

“Within 12 months of permit issuance, the Permittee will sign a Memorandum of Understanding or collection agreement with the U.S. Forest Service to participate in a visibility monitoring project, the results of which will be used to establish a visibility baseline in nearby Class 1 Areas.”

The project as described allows for the installation of a power plant utilizing three combined cycle natural gas fired combustion turbine generating units with Heat Recovery Steam Generators. Under average ambient conditions and inlet air chilling, the combine cycle gas fired turbines and associated steam turbines have a combined gross rated generating capacity of 943 MW. The project is subject to New Source Review, BACT (Best Available Control Technology) and offsets. We feel that plant emissions as proposed by SCAQMD during normal operations meet the BACT requirements. Under South Coast Rule 1303 (b)(2), emission offset must be provided for CO, NO_x, PM₁₀, VOC and SO_x. Where possible the location of the selected offsets should favor sites residing between this source and the Class I wilderness areas.

South Coast Air Quality Management District is considered to be in federal attainment status for SO₂ and NO₂; therefore, a PSD (Prevention of Significant Deterioration) is required.



Pollutant	Total Potential to Emit (tons/year)
NO _x	216
SO _x	16
CO	227

Two National Forest Class I Wilderness areas could be impacted:

Cucamonga Wilderness	- 58 km
San Gabriel Wilderness	- 31 km

For several reasons Nitrogen Oxides (NO_x) are a pollutant of concern to the US Forest Service: (a) the offsets required by South Coast for this pollutant may not be completely effective for these wilderness areas; (b) parts of National Forests nearest the plant are already experiencing excess nitrogen deposition; (c) NO_x contributes to visibility impacts, (d) it is the largest single visibility impacting criteria pollutant emission derived from this project.

One reason NO_x emissions and visibility impacts are high is that during an initial start up the selective catalytic reduction (SCR) is basically inoperative, due to low turbine temperatures. At startup NO_x emissions are estimated to be approximately 37.2 lb/hr per turbine. It is expected that this facilities turbines will operate for less than an hour in this startup condition. Similar gas fired turbines operating in the LA basin require 6 hours from cold start to reach BACT and release approximately 803 lb/hr initially.

All modeling of potential impacts follows the FLAG guidelines. However, because of the nature of the operation and the potential for multiple independent turbine startups per month, the interpretation and evaluation of the present modeling results is somewhat ambiguous and uncertain. Normally this type of uncertainty can be resolved by more detailed modeling, something we do not feel would be warranted in this case.

The modeled annual and short-term concentrations measured as micrograms per cubic meter for Cucamonga and San Gabriel Class I areas were all below the established PSD increments and the proposed annual Class I Significance levels. (EPA proposed New Source Review; FR 7/23/96). Therefore we feel that a cumulative impact analysis is not needed.

The annual modeled deposition of Sulfur and Nitrogen in the USFS Class I areas range from less than 0.001 to 0.002 kg/ha-yr. Neither deposition rate equals or exceeds the 0.005 kg/ha-yr Deposition Analysis Thresholds (DAT) levels identified as significant for either Class I area.,

These analyses are based on the improbable operating conditions of 192 initial cold starts of all the turbines and concurrent operation of auxiliary boiler and standby generator.

Nitrogen deposition rates of 31 kg/ha-yr have been measured in the San Gorgonio area, exceeding loadings commonly thought to lead to ecosystem change. The cumulative impacts of this power plant on those areas is unclear, however, given the expected operating condition (see

Haze discussion below), it is not felt that these emissions are severe enough to support an adverse impact determination.

Visibility Impacts Two types of visibility impact are recognized by Class I area managers, coherent plumes and regional haze. FLAG recommends that plume models be used for sources 50km or closer to Class I area and haze models for Class I areas greater than 50km. We have selected to only analyze for Regional Haze impacts.

Regional Haze All operating scenarios exceed the FLAG recommended concern thresholds of 5% change in light extinction (see table below). Following FLAG, a 5% change in light extinction is normally indicative of the need to perform additional “cumulative” modeling analysis. However, at Class I areas in southern California, visibility is already impaired based on existing IMPROVE monitoring data. As such, it is unlikely that a “cumulative” modeling study would produce a meaningful and different outcome.

USFS Class I Area	Maximum Modeled Light Extinction	Concern Threshold
Cucamonga	6.32%*	5%
San Gabriel	9.89%*	5%

* exceeds or equals Concern Thresholds

While the modeling analysis done for this application is extensive and well documented we are concerned about possible visibility impacts particularly during cold starts as well as the cumulative effects of the other turbine driven generators operating in a similar manner. We need to intensify our monitoring of these wildernesses to address this issue.

The Forest Service concurs with the issuance of this permit on the condition of post PSD monitoring. We suggest that this monitoring be coordinated with the Forest Service to assist in understanding suspected short-term episodes of visibility impairment. Thank you for the opportunity to review this permit application and if you have any questions please contact Mike McCorison at 626-574-5286 or Trent Procter at 559-784-1500.

Sincerely,

/s/ Beth G. Pendleton (for)
BERNARD WEINGARDT
Regional Forester