5.2 TABLE OF CONTENTS

5.2 AIR QUALITY 5.2-1
5.2.1 Affected Environment 5.2-3
5.2.2 Involved Agencies and Agency Contacts 5.2-14
5.2.3 Laws, Ordinances, Regulations, and Standards 5.2-15
5.2.4 Environmental Consequences 5.2-30
5.2.5 Cumulative Air Quality Impacts 5.2-56
5.2.6 Consistency with Laws, Ordinances, Regulations, and Standards 5.2-61
5.2.7 Mitigation Measures 5.2-67
5.2.8 Permits Required and Permit Schedule 5.2-68
5.2.9 References 5.2-69

LIST OF TABLES

Table 5.2-1 Average Temperatures and Precipitation in Bonita, San Diego County (1915-1970) 5.2-4
Table 5.2-2 National and California Ambient Air Quality Standards 5.2-5
Table 5.2-3 Ozone Levels at Chula Vista (PPM) 5.2-8
Table 5.2-4 Nitrogen Dioxide Levels at Chula Vista (PPM) 5.2-9
Table 5.2-5 Carbon Monoxide Levels at Chula Vista (PPM) 5.2-10
Table 5.2-6 Sulfer Dioxide Levels at Chula Vista (PPM) 5.2-11
Table 5.2-7 Particulate Matter (PM_{10}) Levels at Chula Vista ($\mu g/m^3$) 5.2-12
Table 5.2-8 Particulate Matter ($PM_{2.5}$) Levels at Chula Vista ($\mu g/m^3$) 5.2-13
Table 5.2-9 Agency Contacts 5.2-15
Table 5.2-10 PSD Significant Emission Thresholds 5.2-17
Table 5.2-11 PSD Increments and Significant Impact Levels 5.2-18
Table 5.2-12 Laws, Ordinances, Regulations, and Standards 5.2-27
Table 5.2-13 Estimated Construction Equipment/Vehicle Usage 5.2-32
Table 5.2-14 Maximum Daily Construction Emissions, Pounds Per Day Month 8 (Combustion) Month 2 (Fugitive Dust) 5.2-34
Table 5.2-15 Maximum Annual Construction Emissions, Tons Per Year 5.2-34
Table 5.2-16 Nominal Fuel Properties—Natural Gas 5.2-35
Table 5.2-17 Commissioning Emissions (Per Turbine) 5.2-37
Table 5.1-18 Maximum Emission Rates—Combustion Turbines 5.2-38
Table 5.2-19 Startup and Shutdown Emissions (Per Turbine) 5.2-39
Table 5.2-20 Emission Summary 5.2-40
Table 5.2-21 Criteria Pollutant Sources and Emission Totals for Modeling 5.2-41
Table 5.2-22 Non-Criteria Pollutant Emission Totals For Modeling 5.2-42

Table 5.2-23 Project Greenhouse Gas Emissions 5.2-43
Table 5.2-24 Construction Greenhouse Gas Emissions 5.2-43
Table 5.2-25 Modeled Maximum Impacts During Construction 5.2-50
Table 5.2-26 Modeled Maximum Impacts During Commissioning 5.2-51
Table 5.2-27 Summary of Modeling Results 5.2-53
Table 5.2-28 Summary of Results (Modeled Maximum Impacts Plus Background) 5.2-55
Table 5.2-29 Summary of Results of Demonstration of Compliance with Federal 1-Hour NO_2 and 24-Hour $PM_{2.5}$ Standards 5.2-56
Table 5.2-30 Comparison of Project Emissions to Regional Precursor Emissions in 2010: Annual Basis[1] 5.2-57
Table 5.2-31 PSD Significant Emission Thresholds 5.2-61
Table 5.2-32 Compliance with 40 CFR 60 Subpart KKKK 5.2-62
Table 5.2-33 Applicability of BACT Requirements Under NSR 5.2-65
Table 5.2-34 Summary of Proposed BACT 5.2-65
Table 5.2-35 PPEC Offset AND MITIGATION Requirements and ERC Availability 5.2-68

5.2 AIR QUALITY

Pio Pico Energy Center (PPEC) is a proposed 300 megawatt (MW) simple-cycle electrical generating facility located in an industrial area of San Diego County, adjacent to the existing Otay Mesa Generating Project (OMGP). PPEC will supply fast response power to help San Diego Gas & Electric (SDG&E) meet cyclic demand and further utilize renewable resources. The project will be constructed on disturbed land and prepared land, and will include a 230 kilovolt (kV) transmission line, a natural gas supply pipeline, and short connections into adjacent streets for potable and recycled water supply, and sewer and stormwater discharge.

The generating facility would include three General Electric (GE) LMS100 natural gas-fired combustion turbine generators (CTGs), each equipped with water injection to the combustors for reducing production of oxides of nitrogen (NO_x), a selective catalytic reduction (SCR) system with 19 percent aqueous ammonia (NH_3) injection to further reduce NO_x emissions, and an oxidation catalyst to reduce carbon monoxide (CO) emissions.

The project will be a new major stationary source under District New Source Review regulations because it will have a potential to emit more than 50 tons per year (TPY) of NO_x; it will also be a new major source under the federal Prevention of Significant Deterioration (PSD) program because it will have the potential to emit more than 100,000 TPY of greenhouse gases (GHGs), a federally regulated pollutant, and construction will commence after July 1, 2011.

This section of the AFC describes existing air quality conditions, maximum potential impacts from the project, compliance with applicable laws, ordinances, regulations and standards, and mitigation measures that keep project impacts below applicable thresholds of significance. The methodology and results of the air quality analysis used to assess potential impacts are also presented. The analysis has been conducted according to the California Energy Commissions (CEC) power plant siting requirements and also addresses San Diego Air Pollution Control District (SDAPCD) air permitting requirements. A separate PSD application will be submitted to EPA by mid-February, 2011.

The project will use the latest, most efficient generation technology to generate electricity in a manner that will minimize the amount of fuel needed, emissions of criteria pollutants, and potential effects on ambient air quality.

Other beneficial environmental aspects of the project that minimize adverse air quality impacts include the following:

- Clean-burning natural gas as fuel;
- Selective catalytic reduction (SCR) and combustion turbine water injection to reduce NOx emissions;
- Oxidation catalysts to reduce emissions of carbon monoxide and hazardous air pollutants; and
- Appropriately sized stacks to reduce ground-level concentrations of exhaust constituents.

Details of the air quality assessment of the project are contained in the following subsections:

- Section 5.2.1, Affected Environment, describes the local environment surrounding PPEC, including topography, climate, and existing air quality. The most representative meteorological data, including wind speed and direction, temperature, relative humidity, and precipitation, and the most representative recent ambient concentration measurements for criteria air pollutants are summarized.

- Section 5.2.2, Involved Agencies and Agency Contacts, lists the agency personnel contacted during preparation of the air quality assessment.

- Section 5.2.3, Laws, Ordinances, Regulations, and Standards, describes applicable laws, ordinances, regulations, and standards (LORS) pertaining to air quality aspects of the project.

- Section 5.2.4, Environmental Consequences, evaluates the maximum potential air quality impacts due to the project's emissions of nitrogen oxides (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), volatile organic compounds (VOCs), particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). Emission estimates for these pollutants are presented for the construction phase of the project, as well as for operation of the installed equipment over a full range of operating modes, including commissioning, startups and shutdowns, maintenance activities, and normal operation with operable pollution control systems. A dispersion modeling analysis for nitrogen dioxide (NO_2), CO, sulfur dioxide (SO_2), PM_{10}, and $PM_{2.5}$ is presented; the results show that the project would not cause or significantly contribute to exceedances of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS). Emissions of greenhouse gases (GHGs) from the project are also described.

- Section 5.2.5, Cumulative Air Quality Impacts, addresses the cumulative impacts of the project emissions with other potential new sources of air pollution in the area around PPEC.

- Section 5.2.6, Consistency with Laws, Ordinances, Regulations, and Standards, describes how the project will comply with applicable laws, ordinances, regulations, and standards (LORS) pertaining to air quality aspects of the project. This section also provides an analysis of best available control technology (BACT) for the proposed project and explains how the use of water injection with selective catalytic reduction (SCR) and ammonia injection satisfies the SDAPCD NO_x requirements for BACT for the PPEC turbines and how the use of an oxidation catalyst meets the corresponding CO BACT requirements.

- Section 5.2.7, Mitigation Measures, describes the project emission offsets strategy, including emission reduction credits (ERCs) that are proposed to offset project emissions.

- Section 5.2.8, Permits Required and Permit Schedule, lists the air quality permits required for the project and provides a permit schedule for the project.

- Section 5.2.9, References, lists the references used to conduct the air quality assessment.

Some air quality data are presented in other sections of this Application for Certification (AFC), including an evaluation of toxic air pollutants (see Section 5.16, Public Health and Safety) and information relating to the fuel characteristics, heat rate, and startup and operating limits of PPEC (see Section 3.0, Facility Description).

The District has required use of meteorological and ambient data for the period 2006 through 2008 for the purposes of this analysis, and has provided the data in files used to conduct the modeling. All results in this section are based on background data from that time period. EPA requires use of five years' worth of data (if available) for the PSD permit. The supplemental analysis in support of the PSD application will be submitted at a later date, after receipt of additional data from the District, and will be based on the five-year period 2004 through 2008.

5.2.1 Affected Environment

This section describes the regional climate and meteorological conditions that influence the transport and dispersion of air pollutants, as well as the existing air quality within the project region. The data presented in this section are representative of the project site.

PPEC is located in an industrial area of San Diego County, adjacent to the existing OMGP. The project site is comprised of a 9.99 acre parcel located in the southeast quadrant of the Alta Road and Calzada de la Fuente intersection. The proposed project site comprises the entire parcel with Assessor's Parcel Number (APN) 648-040-45, and the laydown area consists of 6.00 acres of an adjacent parcel to the south (APN 648-040-46) (Figure 3.3-2, Project Location).

5.2.1.1 Geography and Topography

The project site is near the western base of the San Ysidro Mountains at an elevation of approximately 635 feet above mean sea level. Terrain elevations are generally flat to the west and south of the project site

5.2.1.2 Meteorology and Climate

Consistent with the typical weather of coastal Southern California, western San Diego County in general enjoys a mild Mediterranean and semi-arid climate characterized by low precipitation, warm summers, mild winters, and temperature inversions. The area's climatic conditions are strongly influenced by the large-scale sinking and warming of air in the semi-permanent subtropical high-pressure center over the eastern Pacific. This high-pressure system effectively blocks out most mid-latitude storms, except in winter when the ridge is weaker and farther south. The coastal mountains on the eastern edge of the county also have a major influence on climate, serving as a meteorological boundary that effectively removes moisture from the marine air flowing from the Pacific.

The nearest full-time meteorological monitoring station to the proposed project site is maintained by the SDAPCD and is located at Otay Mesa on California State Route 905 at the U.S.–Mexico border, approximately 1.9 miles south of the project site. Based on five years of data collection in 2004-2008, the annual average temperature measured there is 63 degrees Fahrenheit (°F). Temperatures of 32°F or below rarely occur at this station, but temperatures of 90°F or above are more frequent, occurring from April through August. During the fall, Santa Ana winds can last

for several days. These are strong, dry, easterly winds from the inland desert areas and result in high temperatures (greater than 90°F) and low relative humidity (often below 20%) in the project area.

San Diego County receives most of its annual rainfall from November to March, when the semi-permanent high-pressure system over the eastern Pacific Ocean moves south, allowing storms to move through the area. The average annual precipitation at the project site is about 11 inches. Local wind circulations are driven by temperature differentials between the land and adjacent Pacific Ocean, creating a system of sea- and land-breezes. Winds are typically of light to moderate strength from the sector between northwest and southwest. Annual and quarterly wind roses and quarterly wind frequency distributions for the project area are provided in Appendix G-1.

During springtime, a local marine layer forms at night and can remain through the morning, causing considerable fogginess along the coastline and extending inland several miles. This fog typically dissipates during the late morning, and the afternoons are generally clear. Fog can also occur during the fall and winter months, lasting well into the day.

The nearest long-term meteorological station with available temperature and precipitation means and extremes is a National Weather Service Cooperative Network (COOP) station in Bonita. This weather station is located approximately 8.7 miles to the northwest of the PPEC at latitude 32°39.6'N, longitude 117°02.0'W. Data collected at this station over a 55-year period (1915-1970) are presented in Table 5.2-1. The hottest month, August, has an average maximum temperature of 80.8°F and an average minimum temperature of 60.7°F. The coldest month, January, has an average maximum temperature of 66.4°F and an average minimum temperature of 40.0°F.

TABLE 5.2-1
AVERAGE TEMPERATURES AND PRECIPITATION IN BONITA, SAN DIEGO COUNTY (1915-1970)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Average Max Temperature (°F)	66.4	67.3	68.6	70.9	72.6	75.0	79.4	80.8	80.6	77.0	73.5	68.4	73.4
Average Min Temperature (°F)	40.0	42.2	44.2	48.2	52.6	55.9	59.6	60.7	57.5	51.6	44.3	40.9	49.8
Precipitation (in)	2.14	2.09	1.75	0.97	0.36	0.06	0.01	0.06	0.18	0.55	1.09	2.25	11.51

Source: Western Regional Climate Center (http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca0968)
Notes:
°F = degrees Fahrenheit
in = inches
Max = maximum
Min = minimum

During winter, the semi-permanent, subtropical high-pressure system over the Pacific Ocean moves south, allowing the passage of frontal systems that bring most of the area's annual precipitation, which totals about 11 inches on average. Monthly mean precipitation amounts at Bonita range from 2.25 inches in December to 0.01 inches in July. Relative humidity levels are generally moderate. In the summer, relative humidity averages 60 to 70 percent in the early

morning and about 30 to 50 percent in the afternoon. In winter, relative humidity averages 70 to 80 percent in the early morning and 40 to 60 percent in the afternoon. At the Otay Mesa station, the prevailing wind direction for most of the year is from the northwest. Wind direction is much more variable during winter months, which can often be associated with the passing of winter storm systems. Wind speeds are normally light or calm.

5.2.1.3 Overview of Air Quality Standards

The U.S. Environmental Protection Agency (EPA) has established national ambient air quality standards (NAAQS) for ozone, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter with aerodynamic diameter less than or equal to ten microns (PM_{10}), particulate matter with aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$), and airborne lead. Areas with ambient levels above these standards are designated by EPA as "nonattainment areas" subject to planning and pollution control requirements that are more stringent than standard requirements.

The California Air Resources Board (CARB) has established California ambient air quality standards for ozone, CO, NO_2, SO_2, sulfates, PM_{10}, $PM_{2.5}$, airborne lead, hydrogen sulfide, and vinyl chloride at levels designed to protect the most sensitive members of the population, particularly children, the elderly, and people who suffer from lung or heart diseases.

Both state and national air quality standards consist of two parts: an allowable concentration of a pollutant, and an averaging time over which the concentration is to be measured. Allowable concentrations are based on the results of studies of the effects of the pollutants on human health, crops and vegetation, and, in some cases, damage to paint and other materials. The averaging times are based on whether the damage caused by the pollutant is more likely to occur during exposures to a high concentration for a short time (one hour, for instance), or to a relatively lower average concentration over a longer period (eight hours, 24 hours, or one month). For some pollutants there is more than one air quality standard, reflecting both short-term and long-term effects. Table 5.2-2 presents the NAAQS and California ambient air quality standards for selected pollutants. The California standards are generally set at concentrations lower than the federal standards and, in some cases, have shorter averaging periods.

TABLE 5.2-2
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Averaging Time	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
Ozone	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.07 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		--		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		35 µg/m³ [1]	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	15.0 µg/m³		
Carbon Monoxide	8 Hour	9.0 ppm (1 mg.m³)	Non-Dispersive Infrared Photometry	9 ppm (10 mg.m³)	None	Non-Dispersive Infrared Photometry

Averaging Time	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
	1 Hour	20 ppm (23 mg.m^3)		35 ppm (40 mg/m^3)		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Gas Phase Chemiluminescence	53 ppb (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m^3)		100 ppb[2] (188 µg/m^3)	None	
Sulfur Dioxide (SO_2)	24 Hour	0.04 ppm (105 µg/m^3)	Ultraviolet Fluorescence	--	--	Ultraviolet Fluorescence Spectrophotometry (Parasaniline Method)
	3 Hour	--		--	0.5 ppm (1300 µg/m^3)	
	1 Hour	0.25 ppm (655 µg/m^3)		75 ppb[3] (196 µg/m^3)	--	
Lead	30 Day Average	1.5 µg/m^3	Atomic Absorption	--	--	--
	Calendar Quarter	--		1.5 µg/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average	--		0.15 µg/m^3		
Visibility Reducing Particles	8 Hour	Extinction Coefficient of 0.23 per kilometer—visibility of ten miles or more due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Notes:
[1] To attain this standard, the 3-year average of the 98th percentile of the daily concentrations must not exceed 35 µg/m^3.
[2] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average must not exceed 100 ppb.
[3] To attain this standard, the 3-year average of the 99th percentiles of the daily maximum 1-hour average must not exceed 75 ppb.
Source: California Air Resources Board (09/08/10)

5.2.1.4 Existing Air Quality

All ambient air quality data presented in this section were published by the California Air Resources Board (CARB) on the ADAM website and/or by U.S. Environmental Protection Agency (EPA) on the AIRS data website. Ambient air concentrations of ozone (O_3), NO_2, SO_2, CO, PM_{10}, and $PM_{2.5}$ are recorded at monitoring stations throughout San Diego County. The immediate area surrounding the project site (within 1.5 to two miles) is an area with sparse population. Further out, areas to the north, northeast, east, and southeast are all vacant, hilly terrain with very sparse population. However, areas more than two miles to the south (Tijuana), five miles west (Otay Mesa West) and northwest (Sunbowl) are urban or suburban areas with moderate to high-density residential areas. Most air quality monitoring stations in the region only record measurements for one or two criteria pollutants, except for those stations located in urban areas. The monitoring stations were generally positioned to represent area-wide ambient conditions rather than the localized impacts of any particular emission source or group of sources. In rural areas of the county, pollutant concentrations are not expected to vary

dramatically from one location to the next, because the emission sources are few and widely distributed. Concentrations of pollutants emitted by industrial and vehicular sources are generally higher in the more populated areas of greater San Diego than in the rest of the county.

The closest air quality monitoring station to the project is located in Otay Mesa at the Otay Mesa-Paseo International Border crossing 1.9 miles south of the project. However, the pollutant concentrations recorded at this station are heavily influenced by the emissions from the hundreds of Mexican vehicles waiting each hour at the border entry point of Otay Mesa-Paseo International, burning fuels that do not meet strict United States and California standards. The San Diego - Overland Street and San Diego - 1110 Beardsley Street monitoring stations are both more than 15 miles away from the PPEC facility, and both are located in the coastal area. The air quality data at these monitoring stations are not representative of the greater Lower Otay Lake area. Therefore, after consultation with the District, data from the Chula Vista monitoring station 9 miles northwest of the project site were used to represent background air pollutant concentrations for the vicinity of the project. As directed by the SDAPCD, background data for the 2006 to 2008 time period were selected for the air modeling analysis of the project, although five years of background data are presented below to characterize the existing conditions at the project site. The PSD supplement, which will be submitted at a later date, will use background data from 2004 through 2008.

Ambient concentrations of O_3, NO_2, SO_2, CO, $PM_{2.5}$, and PM_{10} are recorded at the Chula Vista monitoring station located at 80 East J Street, approximately 9 miles northwest of the project site. The closest station that monitors ambient lead is in Imperial County (Calexico-Ethel Street).

Ozone (O_3). Ozone is an end-product of complex reactions between VOC and NOx in the presence of ultraviolet solar radiation. VOC and NO_x emissions from vehicles and stationary sources, combined with daytime wind flow patterns, mountain barriers, temperature inversions, and intense sunlight, generally result in the highest O_3 concentrations. For purposes of both state and federal air quality planning, the entire San Diego air basin is classified as a nonattainment area with respect to both state and national ambient standards for ozone. Table 5.2-3 shows the measured ozone levels at the Chula Vista station during the period from 2004 to 2008. The one-hour ozone CAAQS of 0.09 parts per million (ppm) was exceeded four times during the five-year analysis period.

TABLE 5.2-3
OZONE LEVELS AT CHULA VISTA (PPM)

Chula Vista Station, San Diego County	2004	2005	2006	2007	2008
Maximum 1-hour Average	0.10	0.09	0.08	0.11	0.11
Number of Days Exceeding California 1-hour Standard (0.09 ppm)	1	0	0	2	1
Number of Days Exceeding Old National 1-hour Standard (0.12 ppm)[1]	0	0	0	0	0
Maximum 8-hour Average	0.09	0.08	0.07	0.09	0.08
Number of Days Exceeding California 8-hour Standard (0.07 ppm)	3	3	0	3	4
Number of Days Exceeding National 8-hour Standard (0.075 ppm)[2]	1	1	0	1	3

Sources: CARB ADAM Website (www.arb.ca.gov/adam/welcome.html).
[1] EPA revoked the 1-hour ozone standard in all areas on June 15, 2005.
[2] To attain this standard, the 3-year average of the fourth-highest maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (Effective May 27, 2008).
ppm = parts per million

The federal eight-hour ozone NAAQS requires that the three-year average of the fourth-highest values for individual years be maintained at or below 0.075 ppm. Therefore, the number of days in each year with maximum eight-hour concentrations above the standard in Table 5.2-3 does not equate to the number of violations.

O_3 data completeness at the Chula Vista station averaged 97 percent over the five-year analysis period.

Nitrogen Dioxide (NO_2). NO_2 is formed primarily from reactions in the atmosphere between NO (nitric oxide) and oxygen (O_2) or ozone. NO is formed during high-temperature combustion processes, when the nitrogen and oxygen in the combustion air combine. Although NO is much less harmful than NO_2, it can be converted to NO_2 in the atmosphere within a matter of hours, or even minutes, under certain conditions. The control of NO and NO_2 emissions is also important because of the role of both compounds in the atmospheric formation of ozone.

Table 5.2-4 shows NO_2 levels recorded at the Chula Vista station for the years 2004 through 2008.

TABLE 5.2-4
NITROGEN DIOXIDE LEVELS AT CHULA VISTA (PPM)

Chula Vista Station, San Diego County	2004	2005	2006	2007	2008
Maximum 1-hour Average	0.072	0.071	0.074	0.082	0.072
Annual Average	0.016	0.016	0.017	0.015	0.015
Days Over State Standard (0.18 ppm, 1-hour)	0	0	0	0	0
Days Over Federal Standard (0.100 ppm, 1-hour)[1]	NA	NA	NA	NA	NA

Sources: CARB ADAM Website (www.arb.ca.gov/adam/welcome.html).
[1]The new federal 1-hour average NO_2 standard of 0.100 ppm was announced by EPA on February 9, 2010 and became effective April 12, 2010. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average values at each monitor must not exceed 100 ppb.
NA = not applicable
ppm = parts per million

For purposes of both state and federal air quality planning, the San Diego air basin is in attainment with regard to NO_2. During the period from 2004 to 2008, there were no violations of the CAAQS one-hour standard (0.18 ppm) at any monitoring station in San Diego County. The highest one-hour concentration recorded at the Chula Vista station during the years 2004 to 2008 was 0.082 ppm in 2007. A new federal one-hour NO_2 standard of 0.100 ppm became effective on April 12, 2010. To attain this standard, the three-year average of the 98th percentile of the daily maximum one-hour average at each monitor within San Diego air basin must not exceed 0.100 ppm. Table 5.2-4 also shows that there were no violations of the annual NAAQS (0.053 ppm) or annual CAAQS (0.030 ppm) at the Chula Vista station during this period.

Data completeness for NO_2 concentrations at the Chula Vista station averaged 97 percent for the 2004 through 2008 period.

Carbon Monoxide (CO). Carbon monoxide is a product of incomplete combustion and is emitted principally from automobiles and other mobile sources of pollution. It is also a product of combustion from stationary sources (both industrial and residential) burning fuels. Peak CO levels occur typically during winter months due to a combination of higher emission rates and stagnant weather conditions.

Table 5.2-5 shows the available data on maximum one-hour and eight-hour average CO levels recorded at the Chula Vista station during the period from 2004 to 2008. As indicated by this table, the maximum measured one-hour average CO levels comply with the NAAQS and CAAQS (35.0 ppm and 20.0 ppm, respectively) and the maximum eight-hour values comply with the NAAQS and CAAQS of 9.0 ppm. The highest individual one-hour and eight-hour CO concentrations at this station during the period from 2006 to 2008 were 3.9 ppm and 2.5 ppm, respectively, both recorded in 2004. Because ambient CO concentrations are generally highest in the immediate vicinity of large fuel-burning sources, the concentrations at the Chula Vista

monitoring station provide a conservative overestimate of actual concentrations in the project site area. For purposes of both state and federal air quality planning, the San Diego air basin is in attainment with regard to CO.

TABLE 5.2-5
CARBON MONOXIDE LEVELS AT CHULA VISTA (PPM)

Chula Vista Station, San Diego County	2004	2005	2006	2007	2008
Maximum 1-hour Average	3.9	2.8	2.7	3.1	2.0
Maximum 8-hour Average	2.5	2.1	2.2	2.2	1.9
Days Over the 8-hour California Standard (9 ppm)	0	0	0	0	0
Days Over the 8-hour Federal Standard (9 ppm)	0	0	0	0	0

Sources: CARB ADAM Website (www.arb.ca.gov/adam/welcome.html); EPA AIRS Website (www.epa.gov/air/data/index.html)
ppm = parts per million

Data completeness for CO concentrations at the Chula Vista station averaged 95 percent over the five-year analysis period.

Sulfur Dioxide (SO_2). SO_2 is produced by the combustion of any sulfur-containing fuel. It is also emitted by chemical plants that treat or refine sulfur or sulfur-containing chemicals. Natural gas contains nearly negligible sulfur, whereas fuel oils may contain much larger amounts. Because of the complexity of the chemical reactions that convert SO_2 to other compounds (such as sulfates), peak concentrations of SO_2 occur at different times of the year in different parts of California, depending on local fuel characteristics, weather, and topography. The San Diego air basin is considered to be in attainment for SO_2 for purposes of state and federal air quality planning.

Table 5.2-6 shows the available data on maximum one-hour, three-hour, 24-hour, and annual average SO_2 levels recorded at the Chula Vista station during the period from 2004 to 2008. As indicated by this table, the maximum measured one-hour average SO_2 levels comply with the new NAAQS (75 ppb) and CAAQS (0.25 ppm), the maximum three-hour average SO_2 levels comply with the NAAQS (0.5 ppm), and the maximum 24-hour values comply with the NAAQS and CAAQS of 0.14 ppm and 0.04 ppm, respectively. The table also demonstrates compliance with the annual SO_2 NAAQS of 0.03 ppm. Note that the 24-hour and annual NAAQS for SO_2 have been superseded by the new one-hour NAAQS, which became effective on August 23, 2010. SO_2 data completeness at the Chula Vista station averaged 97 percent over the five-year analysis period.

TABLE 5.2-6
SULFER DIOXIDE LEVELS AT CHULA VISTA (PPM)

Chula Vista Station, San Diego County	2004	2005	2006	2007	2008
Highest 1-hour average	0.042	0.016	0.017	0.012	0.010
Highest 3-hour average	0.021	0.009	0.013	0.007	0.005
Highest 24-hour average	0.016	0.005	0.006	0.004	0.004
Annual Average	0.003	0.003	0.003	0.002	0.002
Days Over 1-hour State Standard (0.25 ppm)	0	0	0	0	0
Days Over 1-hour Federal Standard (75 ppb)[1]	0	0	0	0	0
Days Over 24-hour State Standard (0.04 ppm)	0	0	0	0	0
Days Over 3-hour Federal Standard (0.5 ppm)	0	0	0	0	0

Sources: CARB ADAM Website (www.arb.ca.gov/adam/welcome.html); EPA AIRS Website (www.epa.gov/air/data/index.html)
[1] Final rule signed June 22, 2010, effective August 23, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.
ppm = parts per million

Respirable Particulate Matter (PM_{10}). Particulates in the air are caused by a combination of wind-blown fugitive dust; particles emitted from combustion sources and manufacturing processes; and organic, sulfate, and nitrate aerosols formed in the air from emitted hydrocarbons, sulfur oxides, and nitrogen oxides. Particulates with a diameter less than or equal to ten microns are referred to as PM_{10}, and are regulated because they can be inhaled, leading to health effects. Fine particulates, referred to as $PM_{2.5}$ and having a diameter equal to or less than 2.5 microns, are a subset of PM_{10} that are also regulated. $PM_{2.5}$ standards are discussed later in this section.

Table 5.2-7 shows the maximum PM_{10} levels recorded at the Chula Vista monitoring station during the period from 2004 through 2008 and the arithmetic annual average concentrations for the same period. (The arithmetic annual average is simply the arithmetic mean of the daily observations.) PM_{10} is monitored according to different protocols for evaluating compliance with the state and federal standards for this pollutant. Specifically, California uses a gravimetric or beta attenuation method, whereas compliance with federal standards is evaluated based on an inertial separation and gravimetric analysis. This accounts for the slightly differing 24-hour concentrations listed in Table 5.2-7 that represent data obtained by means of the state and federal samplers.

At the Chula Vista station, the maximum 24-hour PM_{10} levels exceed the CAAQS state standard of 50 micrograms per cubic meter (µg/m3) a few times per year. The maximum daily concentration recorded during the analysis period was 58 $\mu g/m^3$ (state samplers) in 2007. The maximum annual arithmetic mean concentration recorded at Chula Vista was 27.0 $\mu g/m^3$ in 2005, which is above the state standard of 20 $\mu g/m^3$. The federal annual PM_{10} standard was revoked by the EPA in 2006 due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution. San Diego County's attainment status for the federal PM_{10} standard is "unclassified." San Diego County is not in attainment with state PM_{10} standards.

PM_{10} concentration data completeness at the Chula Vista station averaged 99 percent for the five years analyzed.

TABLE 5.2-7
PARTICULATE MATTER (PM_{10}) LEVELS AT CHULA VISTA ($\mu g/m^3$)

Chula Vista Station, San Diego County	2004	2005	2006	2007	2008
Maximum 24-hour Average (federal testing samplers)	44	52	51	57	53
Maximum 24-hour Average (state testing samplers)	45	53	52	58	54
Annual Arithmetic Mean[1]	26.4	27.0	26.3	26.1	26.7
Estimated Number of Days Exceeding Federal Standard (150 $\mu g/m^3$)	0	0	0	0	0
Estimated Number of Days Exceeding State Standard (50 $\mu g/m^3$)	0	13.1	11.7	12.2	6.1

Sources: CARB ADAM Website (www.arb.ca.gov/adam/welcome.html).
[1] On December 17, 2006, the annual PM_{10} federal standard (50 $\mu g/m^3$) was revoked.
$\mu g/m^3$ = micrograms per cubic meter
PM_{10} = particulate matter less than 10 microns in diameter

Fine Particulates ($PM_{2.5}$). Fine particulates result from fuel combustion in motor vehicles and industrial processes, residential and agricultural burning, and atmospheric reactions involving NOx, SOx, and organics. Fine particulates are referred to as $PM_{2.5}$ and have a diameter equal to or less than 2.5 microns. In 1997, EPA established annual and 24-hour NAAQS for $PM_{2.5}$ for the first time. The most recent revision to the standard regulating the 3-year average of the 98th percentile of 24-hour $PM_{2.5}$ concentrations (35 µg/m3) became effective on December 17, 2006.

The $PM_{2.5}$ data in Table 5.2-8 show that the national 24-hour average NAAQS of 35 $\mu g/m^3$ was exceeded several times during the five-year analysis period, all during the 2007 calendar year. The maximum recorded 24-hour average value was 45.7 $\mu g/m^3$ in 2007. The highest value recorded in 2007 (77.8 $\mu g/m^3$) was excluded by the District as an exceptional event related to wild fires in the area. The annual $PM_{2.5}$ data are also presented in this table. The maximum annual arithmetic mean was 12.5 $\mu g/m^3$, recorded in 2007, which is below the national standard of 15 $\mu g/m^3$, but above the California standard of 12 $\mu g/m^3$. San Diego County's attainment status for the federal $PM_{2.5}$ standards is "unclassifiable/attainment." San Diego County is not in attainment with the state $PM_{2.5}$ standard.

TABLE 5.2-8
PARTICULATE MATTER ($PM_{2.5}$) LEVELS AT CHULA VISTA ($\mu g/m^3$)

Chula Vista Station, San Diego County	2004	2005	2006	2007	2008
Maximum 24-hour Average (federal only)1	32.7	34.3	30.2	45.7	32.9
Annual Arithmetic Mean	12.2	11.8	11.2	12.5	12.3
Estimated Number of Days Exceeding Federal Standard (35 µg/m3)	0	0	0	9.9	0

Source: CARB ADAM Website (www.arb.ca.gov/adam/welcome.html).
[1] EPA lowered the 24-hour standard from 65 µg/m3 to 35 µg/m3 on December 17, 2006. Compliance with this standard is based on the 3-year average of the 98th percentile daily concentrations.
µg/m3 = micrograms per cubic meter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter

Airborne Lead (Pb). Lead pollution has historically been emitted predominantly from the combustion of fuels. However, legislation in the early 1970s required a gradual reduction of the lead content of gasoline. Beginning with the introduction of unleaded gasoline in 1975, lead levels have been dramatically reduced throughout the U.S., and violations of the ambient standards for this pollutant have been virtually eliminated.

On October 15, 2008, EPA revised the federal ambient air quality standard for lead, lowering it from 1.5 $\mu g/m^3$ to 0.15 $\mu g/m^3$ for both the primary and the secondary standard. EPA determined that numerous health studies are now available that demonstrate health effects at much lower levels of lead than previously thought. EPA subsequently published the final rule in the Federal Register on November 12, 2008. This is the first time that the federal lead standard has been revised since it was first issued in 1978.

In addition to revising the level of the standard, EPA changed the averaging time from a quarterly average to a rolling three-month average. The level of the standard is "not to be exceeded" and is evaluated over a three-year period. Lead levels are measured as lead in total suspended particulate (TSP). The revised lead standard also includes new monitoring requirements.

As lead concentrations dropped dramatically and all areas of California attained the previous standard, most lead monitors were shut down by the early 1990s and resources deployed to other pollutants. As a result, insufficient monitoring data exist to determine designations, and most areas of the state, including San Diego County, are unclassifiable for the revised standard. No monitoring stations in San Diego County measure lead concentrations.

Particulate Sulfates. Sulfate compounds found in the lower atmosphere consist of both primary and secondary particles. Primary sulfate particles are directly emitted from open pit mines, dry lakebeds, and desert soils. Fuel combustion is another source of sulfates, both primary and secondary. Secondary sulfate particles are produced when oxides of sulfur (SO_x) emissions are transformed into particles through physical and chemical processes in the atmosphere. Particles can be transported long distances. The San Diego air basin is unclassified with respect to the state ambient standard for sulfates; there is no federal standard.

Other State-designated Criteria Pollutants. Along with sulfates, California has designated hydrogen sulfide and visibility-reducing particles as criteria pollutants, in addition to the federal criteria pollutants. The San Diego air basin remains unclassified for both pollutants.

5.2.2 Involved Agencies and Agency Contacts

The EPA has responsibility for enforcing, on a national basis, the requirements of many of the country's environmental and hazardous waste laws. California is under the jurisdiction of EPA Region 9, which has its offices in San Francisco. Region 9 is responsible for the local administration of EPA programs for California, Arizona, Nevada, Hawaii, and certain Pacific trust territories. EPA's activities relative to the California air pollution control program focus principally on reviewing California's submittals for the State Implementation Plan (SIP). The SIP is required by the federal Clean Air Act to demonstrate how all areas of the state will meet the national ambient air quality standards within the federally specified deadlines (42 USC §7409, 7411).

The California Air Resources Board was created in 1968 by the Mulford-Carrell Air Resources Act, through the merger of two other state agencies. CARB's primary responsibilities are to develop, adopt, implement, and enforce the state's motor vehicle pollution control program; to administer and coordinate the state's air pollution research program; to adopt and update as necessary the state's ambient air quality standards; to review the operations of the local air pollution control districts; and to review and coordinate preparation of the SIP for achievement of the federal ambient air quality standards (California Health & Safety Code (H&SC) §39500 et seq.).

When the state's air pollution statutes were reorganized in the mid-1960s, local air pollution control districts (APCDs) were required to be established in each county of the state (H&SC §40000 et seq.). There are three different types of districts: county, regional, and unified. In addition, special air quality management districts (AQMDs), with more comprehensive authority over non-vehicular sources as well as transportation and other regional planning responsibilities, have been established by the Legislature for several regions in California (H&SC §40200 et seq.).

Air pollution control districts and air quality management districts in California have principal responsibility for:

- Developing plans for meeting the state and federal ambient air quality standard;
- Developing control measures for non-vehicular sources of air pollution necessary to achieve and maintain both state and federal air quality standards;
- Implementing permit programs established for the construction, modification, and operation of sources of air pollution;
- Enforcing air pollution statutes and regulations governing non-vehicular sources; and
- Developing employer-based trip reduction programs.

Each level of government has adopted specific regulations that limit emissions from stationary combustion sources, several of which are applicable to this project. The other air agencies having permitting authority for this project are shown in Table 5.2-9. The applicable federal laws, ordinances, regulations and standards (LORS) and compliance with these requirements are discussed in more detail in Subsections 5.2.3 and 5.2.6. An application for a Determination of Compliance will be filed with the SDAPCD at approximately the same time as the AFC is filed with the Commission. An application for an Acid Rain permit will be filed at approximately the same time as the AFC. An application for a Prevention of Significant Deterioration (PSD) permit will be filed shortly after the AFC is filed with the Commission. An application for a federal operating permit (Title V permit) will be filed within 12 months of commencement of operation of the facility.

TABLE 5.2-9
AGENCY CONTACTS

Agency	Authority	Contact
EPA Region 9	PSD Permit Issuance, Enforcement	Gerardo Rios, Chief Permits Office EPA Region 9 75 Hawthorne Street San Francisco, CA 94105
California Air Resources Board	Regulatory Oversight	Mike Tollstrup, Chief Project Assessment Branch California Air Resources Board 2020 L Street Sacramento, CA 95814 (916) 322-6026
San Diego Air Pollution Control District	Permit Issuance, Enforcement	Steve Moore, Senior Air Pollution Control Engineer San Diego County Air Pollution Control District 10124 Old Grove Road San Diego, CA 92131 858-586-2750

5.2.3 Laws, Ordinances, Regulations, and Standards

5.2.3.1 Federal LORS

The EPA implements and enforces the requirements of many of the federal environmental laws. The federal Clean Air Act, as most recently amended in 1990, provides EPA with the legal authority to regulate air pollution from stationary sources such as the project. EPA has promulgated the following stationary source regulatory programs to implement the requirements of the 1990 Clean Air Act:

- Prevention of Significant Deterioration (PSD);
- New Source Review (NSR);
- Standards of Performance for New Stationary Sources (NSPS);
- National Emission Standards for Hazardous Air Pollutants (NESHAPS);

- Title IV: Acid Deposition Control; and
- Title V: Operating Permits.

Prevention of Significant Deterioration Program

Authority: Clean Air Act §160-169A, 42 USC §7470-7491; 40 CFR Parts 51 and 52

Requirements: Requires pre-construction review and permitting of new or modified major stationary sources of air pollution to prevent significant deterioration of ambient air quality. PSD applies to pollutants for which ambient concentrations do not exceed the corresponding NAAQS (i.e., attainment pollutants). The PSD program allows new sources of air pollution to be constructed, or existing sources to be modified, while preserving the existing ambient air quality levels, protecting public health and welfare, and protecting Class I areas (e.g., national parks and wilderness areas).

The PSD requirements apply to any project that is a new major stationary source or a major modification to an existing major stationary source. A major source is a listed facility (one of 28 PSD source categories listed in the federal Clean Air Act) that emits at least 100 TPY, or any other facility that emits at least 250 TPY.

Effective July 1, 2011, a stationary source that emits more than 100,000 TPY of greenhouse gases (GHGs) is also considered to be a major stationary source.

A major modification is any project at a major stationary source that results in a significant increase in emissions of any PSD pollutant. A PSD pollutant is a criteria pollutant for which the area is not nonattainment (for SDAPCD, the PSD pollutants are SO_2, PM_{10}, $PM_{2.5}$, NO_x, CO, lead, and GHGs).

A significant increase for a PSD pollutant is an increase above the significant emission rate for that pollutant (Table 5.2-10). It is important to note that, once PSD is triggered by any pollutant, PSD requirements apply to any PSD pollutant with an emission increase above the significance level, regardless of whether the facility is major for that pollutant. For PPEC, the facility is major because of GHG emissions. PSD applies to the project's significant increases of NO_x, PM_{10}, and $PM_{2,5}$, even though the facility will not be major for any of those pollutants.

An application for a PSD will be filed with EPA shortly after the AFC is filed with the Commission.

TABLE 5.2-10
PSD SIGNIFICANT EMISSION THRESHOLDS

Pollutant	PSD Significant Emission Threshold (TPY)[1]
SO_2	40
PM_{10}	15
$PM_{2.5}$	10
NOx	40
CO	100
Lead	0.6

[1] 40 CFR 52.21 (b)(1)(23).

The principal requirements for the PSD program include the following:

- Emissions of the PSD pollutants that are subject to PSD review must be controlled using BACT.
- Air quality impacts in combination with other increment-consuming sources must not exceed maximum allowable incremental increases.
- Air quality impacts of all sources in the area plus ambient pollutant background levels cannot exceed NAAQS.
- Pre- and/or post-construction air quality monitoring may be required.
- The air quality impacts on soils, vegetation, and nearby PSD Class I areas (specific national parks and wilderness areas) must be evaluated. (Note: The PPEC is located in a Class II area.)

Air Quality Monitoring

At its discretion, EPA Region 9 may require pre-construction and/or post-construction ambient air quality monitoring for PSD sources if representative monitoring data are not already available. Pre-construction monitoring data must be gathered over a one-year period to characterize local ambient air quality. Post-construction air quality monitoring data must be collected as deemed necessary by EPA Region 9 to characterize the impacts of proposed project emissions on ambient air quality.

Best Available Control Technology

BACT must be applied to any new or modified major source to minimize the emissions increase of those pollutants exceeding the PSD emission thresholds. EPA defines BACT as an emissions limitation based on the maximum degree of reduction for each subject pollutant, considering energy, environmental, and economic impacts, that is achievable through the application of available methods, systems, and techniques. BACT must be as stringent as any emission limit required by an applicable NSPS or NESHAP.

Air Quality Impact Analysis

An air quality dispersion analysis must be conducted to evaluate impacts of significant emission increases from new or modified facilities on ambient air quality. PSD source emissions must not cause or contribute to an exceedance of any ambient air quality standard, and the increase in ambient air concentrations must not exceed the allowable increments shown in Table 5.2-11. Once PSD is triggered for the project, all pollutants with emission increases above the PSD significance thresholds are subject to this requirement.

TABLE 5.2-11
PSD INCREMENTS AND SIGNIFICANT IMPACT LEVELS

Pollutant	Averaging Time	SILs (µg/m³)[1]	Maximum Allowable Class II Increments[2]
SO_2	Annual	1.0	20
	24-hr	5	91
	3-hr	25	512
	1-hr	7.8[3]	No 1-hr increment
PM_{10}	Annual	1.0	17
	24-hr	5	30
$PM_{2.5}$	Annual	0.3	4
	24-hr	1.2	9
NO_2	Annual	1.0	25
	1-hr	7.5[3]	No 1-hr increment
CO	8-hr	500	No CO increments
	1-hr	2,000	

1 40 CFR 51.165 (b)(2).
2 40 CFR 52.21 (c)
3 EPA has not yet defined significance impact levels (SILs) for one-hour NO_2 or SO_2 impacts. However, EPA has suggested that, until SILs have been promulgated, values of 4 ppb (7.5 µg/m³) for NO_2 and 3 ppb (7.8 µg/m³) for SO_2 may be used. These values will be used in this analysis wherever a SIL would be used for NO_2 or SO_2.

Protection of Class I Areas

The potential increase in ambient air quality concentrations for attainment pollutants (i.e., NO_2, PM_{10}, or SO_2) within Class I areas closer than approximately 100 km may need to be quantified if the new or modified PSD source were to have a sufficiently large emission increase as evaluated by the Class I area Federal Land Managers. In such a case, a Class I visibility impact analysis would also be performed.

Growth, Visibility, Soils, and Vegetation Impacts

Impairment to visibility, soils, and vegetation resulting from PSD source emissions as well as associated commercial, residential, industrial, and other growth must be analyzed. This analysis includes cumulative impacts to local ambient air quality.

Administering Agency: EPA Region 9.

Nonattainment New Source Review

Authority: Clean Air Act §171-193, 42 USC §7501 et seq.; 40 CFR Parts 51 and 52

Requirement: Requires pre-construction review and permitting of new or modified major stationary sources of air pollution to allow industrial growth without interfering with the attainment and maintenance of ambient quality standards. In general, this program is implemented at the local level with EPA oversight.

- Emissions must be controlled to the lowest achievable emission rate (LAER).
- Sufficient offsetting emissions reductions must be obtained following the requirements in the regulations to continue reasonable further progress toward attainment of applicable NAAQS.
- The owner or operator of the new facility has demonstrated that major stationary sources owned or operated by the same entity in California are in compliance or on schedule for compliance with applicable emissions limitations in this rule.
- The administrator must find that the implementation plan has been adequately implemented.
- An analysis of alternatives must show that the benefits of the proposed source significantly outweigh any environmental and social costs.

Nonattainment new source review jurisdiction has been delegated to the SDAPCD for all pollutants and is discussed further under local LORS section below.

Administering Agency: SDAPCD, with EPA Region 9 oversight.

National Standards of Performance for New Stationary Sources

Authority: Clean Air Act §111, 42 USC §7411; 40 CFR Part 60

Requirements: Establishes national standards of performance to limit the emissions of criteria pollutants (air pollutants for which EPA has established NAAQS) from new or reconstructed facilities in specific source categories. Applicability of these regulations depends on equipment size, process rate, and date of construction. The project is subject to the following NSPS:

Subpart KKKK, Standards of Performance for Stationary Gas Turbines (constructed after February 18, 2005) is applicable to the simple-cycle gas turbines. Subpart KKKK limits NO_x and SO_2 emissions from new gas turbines based on power output. The limits for gas turbines greater than 30 MW which are applicable to the proposed project's gas turbines are 0.39 lb NO_x per MW-hr and 0.58 lb SO_2 per MW-hr. These standards are enforced at the local level with federal and state oversight.

Administering Agency: SDAPCD, with EPA Region 9 and CARB oversight.

National Emission Standards for Hazardous Air Pollutants

Authority: Clean Air Act §112, 42 USC §7412

Requirements: Establishes national emission standards to limit emissions of hazardous air pollutants (HAPs, or air pollutants identified by EPA as causing or contributing to the adverse health effects of air pollution but for which NAAQS have not been established) from facilities in specific source categories. These standards are implemented at the local level with federal oversight. Only the NESHAP for combustion turbines, which limits formaldehyde emissions from turbines, is potentially applicable to the proposed project.

Administering Agency: SDAPCD, with EPA Region 9 oversight.

Acid Rain Program

Authority: Clean Air Act §401 (Title IV), 42 USC §7651

Requirement: Requires the monitoring and reporting of emissions of acidic compounds and their precursors from combustion equipment owned by a utility. The principal source of these compounds is the combustion of fossil fuels. Therefore, Title IV established national standards to monitor, record, and, in some cases, limit SO_2 and NO_x emissions from electrical power generating facilities. These standards are implemented at the local level with federal oversight. SDAPCD has received delegation authority to implement Title IV.

Administering Agency: SDAPCD, with EPA Region 9 oversight.

Title V Operating Permits Program

Authority: Clean Air Act §501 (Title V), 42 USC §7661

Requirements: Requires the issuance of operating permits that identify all applicable federal performance, operating, monitoring, recordkeeping, and reporting requirements. Title V applies to major facilities, Phase II acid rain facilities, subject solid waste incinerator facilities, and any facility listed by EPA as requiring a Title V permit. SDAPCD has received delegation authority for this program.

Administering Agency: SDAPCD, with EPA Region IX oversight.

5.2.3.2 State LORS

The California Air Resources Board (CARB) was created in 1968 by the Mulford-Carrell Air Resources Act, through the merger of two other state agencies. CARB's primary responsibilities are to develop, adopt, implement, and enforce the state's motor vehicle pollution control program; to administer and coordinate the state's air pollution research program; to adopt and update, as necessary, the state's ambient air quality standards; to review the operations of the local air pollution control districts; and to review and coordinate preparation of the SIP for achievement of the federal ambient air quality standards. CARB has implemented the following state or federal stationary source regulatory programs in accordance with the requirements of the federal Clean Air Act and California Health & Safety Code (H&SC):

- State Implementation Plan (SIP);
- California Clean Air Act;
- Nuisance Regulation;
- Toxic Air Contaminant Program;
- Air Toxics "Hot Spots" Act;
- CEC and CARB Memorandum of Understanding; and
- California Climate Change Regulatory Program.

State Implementation Plan

Authority: Health & Safety Code (H&SC) §39500 et seq.

Requirements: Required by the federal Clean Air Act, the SIP must demonstrate the means by which all areas of the state will attain and maintain NAAQS within the federally mandated deadlines. CARB reviews and coordinates preparation of the SIP. Local districts must adopt new rules (and/or revise existing rules) and demonstrate that the resulting emission reductions, in conjunction with reductions in mobile source emissions, will result in the attainment of NAAQS. The relevant SDAPCD Rules and Regulations that have also been incorporated into the SIP are discussed with the local LORS.

Administering Agency: SDAPCD, with CARB and EPA Region 9 oversight.

California Clean Air Act

Authority: H&SC §40910 − 40930

Requirements: Established in 1989, the California Clean Air Act requires local districts to attain and maintain both national and state ambient air quality standards at the "earliest practicable date." Local districts must prepare air quality plans demonstrating the means by which the ambient air quality standards will be attained and maintained. The SJVAPCD Air Quality Plan is discussed with the local LORS.

Administering Agency: SJVAPCD, with CARB oversight.

Nuisance Regulation

Authority: CA Health & Safety Code §41700

Requirements: Provides that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

Administering Agency: SDAPCD and CARB

Toxic Air Contaminant Program

Authority: H&SC §39650 − 39675

Requirements: Established in 1983, the Toxic Air Contaminant Identification and Control Act created a two-step process to identify toxic air contaminants and control their emissions. CARB identifies and prioritizes the pollutants to be considered for identification as toxic air contaminants, and also assesses the potential for human exposure to a substance; the Office of Environmental Health Hazard Assessment (OEHHA) evaluates the corresponding health effects. Both agencies collaborate in the preparation of a risk assessment report, which concludes whether a substance poses a significant health risk and should be identified as a toxic air contaminant. In 1993, the Legislature amended the program to identify the 187 federal hazardous air pollutants as toxic air contaminants. CARB reviews the emission sources of an identified toxic air contaminant and, if necessary, develops air toxics control measures to reduce the emissions.

Administering Agency: SDAPCD and CARB

Air Toxic "Hot Spots" Act

Authority: H& SC §44300-44384; 17 CCR §93300-93347

Requirements: Established in 1987, the Air Toxics "Hot Spots" Information and Assessment Act (also known as AB 2588) supplements the toxic air contaminant program, by requiring the development of a statewide inventory of air toxics emissions from stationary sources. The program requires affected facilities to prepare (1) an emissions inventory plan that identifies relevant air toxics and sources of air toxics emissions; (2) an emissions inventory report quantifying air toxics emissions; and (3) a health risk assessment, if necessary, to characterize the health risks to the exposed public. Facilities whose air toxics emissions are deemed to pose a significant health risk must issue notices to the exposed population. In 1992, the Legislature amended the program to further require facilities whose air toxics emissions are deemed to pose a significant health risk to implement risk management plans to reduce the associated health risks. This program is implemented at the local level with state oversight.

Administering Agency: SDAPCD and CARB

CEC and CARB Memorandum of Understanding

Authority: CA Pub. Res. Code §25523(a); 20 CCR §1752, 1752.5, 2300-2309 and Div. 2, Chap. 5, Art. 1, Appendix B, Part (k)

Requirements: Provides for the inclusion of requirements in the CEC's decision on an application for certification to assure protection of environmental quality. The AFC is required to include information concerning air quality protection.

Administering Agency: California Energy Commission

California Climate Change Regulatory Program

Authority: Stats. 2006, Ch. 488 and CA Health & Safety Code § 38500-38599

Requirements: The State of California adopted the Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) on September 27, 2006, which requires sources within the state to reduce carbon emissions by approximately 25% by the year 2020. The California Climate Action Registry had already published protocols for voluntary reporting of GHG emissions from a number of sectors of the economy, and CARB has adopted regulations to limit GHG emissions from electric power plants and other specific source categories. In addition, CARB has issued guidance with recommended emission factors for calculating GHG emissions.

Senate Bill (SB) 97, adopted August 21, 2007, requires the California Office of Planning and Research (OPR) to develop CEQA guidelines "for the mitigation of GHG emissions or the effects of GHG emissions" by July 1, 2009. SB 97 further requires the Resources Agency Secretary to adopt these CEQA guidelines by January 1, 2010. Finally, SB 97 removes GHG emissions as a cause of action under CEQA for specified state-financed infrastructure projects until January 1, 2010.

The AFC is required to include the project's emission rates of greenhouse gases (CO_2, CH_4, N_2O, and SF_6) from the stack, cooling towers, fuels and materials handling processes, delivery and storage systems, and from all on-site secondary emission sources.

On January 25, 2007, the PUC and CEC jointly adopted an interim Greenhouse Gas Emissions Performance Standard (EPS) in an effort to help mitigate climate change. The EPS is a facility-based emissions standard requiring that all new long-term commitments for baseload generation to serve California consumers be with power plants that have emissions no greater than a combined-cycle gas turbine plant. That level is established at 1,100 pounds of CO_2 per megawatt-hour.

Administering Agencies: CARB and CEC.

5.2.3.3 Local LORS

When the state's air pollution statutes were reorganized in the mid-1960s, local air pollution control districts (APCDs) were required to be established in each county of the state (H&SC §4000 et seq.). There are three different types of districts: county, regional, and unified. In addition, special air quality management districts (AQMDs), with more comprehensive authority over non-vehicular sources as well as transportation and other regional planning responsibilities, have been established by the Legislature for several regions in California, (H&SC §40200 et seq.).

Air pollution control districts and air quality management districts in California have principal responsibility for:

- Developing plans for meeting the state and federal ambient air quality standard;

- Developing control measures for non-vehicular sources of air pollution necessary to achieve and maintain both state and federal air quality standards;
- Implementing permit programs established for the construction, modification, and operation of sources of air pollution; and
- Enforcing air pollution statutes and regulations governing non-vehicular sources; and for developing employer-based trip reduction programs.

Each level of government has adopted specific regulations that limit emissions from stationary combustion sources, several of which are applicable to this project. An application for a Determination of Compliance will be filed with SDAPCD at approximately the same time as the AFC is filed with the Commission.

San Diego Air Pollution Control District Rules and Regulations

Authority: CA Health & Safety Code §40001

Requirements: Prohibit emissions and other discharges (such as smoke and odors) from specific sources of air pollution in excess of specified levels.

Administering Agency: SDAPCD, with CARB oversight.

Permits Required

Under Regulation II, Rule 10, Permits Required, and Rule 20.5, Power Plants, SDAPCD administers the air quality regulatory program for the construction, alteration, replacement, and operation of new power plants. As part of the AFC process, the project will be required to obtain a preconstruction Determination of Compliance (DOC) from the SDAPCD. Regulation II, Rule 10 incorporates other SDAPCD rules that govern how sources may emit air contaminants through the issuance of air permits (i.e., Authority to Construct [ATC] and Permit to Operate [PTO]). This permitting process allows the SDAPCD to review new and modified air pollution sources to ensure compliance with all applicable prohibitory rules and to ensure that appropriate emission controls are used. Projects that are reviewed under the CEC AFC process must obtain a final DOC (equivalent under SDAPCD rules to an ATC upon issuance of a CEC Final Decision that includes all the conditions proposed in the DOC) from the local air district (in this case, SDAPCD) prior to construction of the new power plant. The ATC remains in effect until the PTO application is granted, denied, or canceled. Once the project commences operations and demonstrates compliance with the ATC, SDAPCD will issue a PTO. The PTO specifies conditions that the facility must meet to comply with all applicable air quality rules, regulations, and standards.

New Source Review Requirements

The SDAPCD's New Source Review (NSR) rule (Regulation II, Rule 20.3 NSR – Major Stationary Sources & PSD Stationary Sources) establishes the criteria for siting new and modified emission sources; this rule is applicable to the proposed project. SDAPCD has been delegated authority for NSR rule development and enforcement according to the terms of Rule 20.3. There are three basic requirements within the NSR rules. First, BACT and Lowest

Achievable Emission Rate (LAER) requirements must be applied to any new source with potential emissions above specified threshold quantities. Second, all potential emission increases of nonattainment pollutants or precursors from the proposed source above specified thresholds must be offset by real, quantifiable, surplus, permanent, and enforceable emission decreases in the form of ERCs. Third, an ambient air quality impact analysis must be conducted to confirm that the project does not cause or contribute to a violation of a national or California AAQS or jeopardize public health.

New Source Review Requirements for Air Toxics

The SDAPCD's New Source Review (NSR) rule for air toxics (Regulation XII, Rule 1200 (Toxic Air Contaminants - New Source Review) describes the requirements, procedures, and standards for evaluating the potential impact of toxic air contaminants (TAC) from new sources and modifications to existing sources. The rule also requires a demonstration that the source will not exceed the health risk thresholds in Section (d) of the rule.

New Source Performance Standards

The SDAPCD's New Source Performance Standards (Regulation X, Standards of Performance for New Stationary Sources) incorporates the federal NSPS from 40 CFR Part 60. The applicability and requirements of the New Source Performance Standards are discussed above under the federal regulations section.

Federal Programs and Permits

The federal Title IV acid rain program requirement and Title V operational permit requirements are in SDAPCD's Rule 1412 (Federal Acid Rain Program Requirements) and Regulation XIV Rule 1401/1410. The applicability and requirements of these programs and permits are discussed above under the federal regulations section.

Public Notification

Because the proposed PPEC project emissions will exceed the AQIA trigger levels, public notice under Rule 20.3 is required and the Applicant expects that the SDAPCD Air Pollution Control Officer will provide this notice in a timely manner.

Permit Fees

The SDAPCD requirements regarding permit fees are specified in Regulation III. This regulation establishes the filing and permit review fees for specific types of new sources, as well as annual renewal fees and penalty fees for existing sources.

Prohibitions

The SDAPCD prohibitions for specific types of sources and pollutants are addressed in Regulation IV. The prohibition rules that apply to the proposed PPEC project are listed below.

- Rule 50 – Visible Emissions: This rule prohibits any source from discharging any emissions of any air contaminant that is darker in shade than that designated as Number 1 on the Ringelmann Chart for a period or periods aggregating more than 3 minutes in any period of 60 consecutive minutes.

- Rule 51 – Nuisance: This rule prohibits the discharge from a facility of air contaminants that cause injury, detriment, nuisance, or annoyance to the public, or cause damage to business or property.

- Rule 52 – Particulate Matter Emission Standards: This rule prohibits the discharge from any source of particulate matter in excess of 0.10 grain per dry standard cubic foot (0.23 grams per dry standard cubic meter) of gas.

  Rule 62 – Sulfur Content of Fuels: This rule prohibits any stationary source to use any gaseous fuel containing more than 10 grains of sulfur compounds per 100 cubic feet of dry gaseous fuel.

All applicable LORS are summarized in Table 5.2-12.

TABLE 5.2-12
LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

LORS	Purpose	Regulating Agency	Permit or Approval	Schedule and Status of Permit	Conformance (Section)
Federal					
Clean Air Act (CAA) §160-169A and implementing regulations, Title 42 United States Code (USC) §7470-7491 (42 USC 7470-7491), Title 40 Code of Federal Regulations (CFR) Parts 51 & 52 (40 CFR 51 & 52) (Prevention of Significant Deterioration Program)	Requires prevention of significant deterioration (PSD) review and facility permitting for construction of new or modified major stationary sources of air pollution. PSD review applies to pollutants for which ambient concentrations are lower than NAAQS.	EPA	Issues PSD Permit with conditions limiting emissions	Agency approval to be obtained before start of construction	§5.2.6.1
CAA §171-193, 42 USC §7501 et seq. (New Source Review)	Requires new source review (NSR) facility permitting for construction or modification of specified stationary sources. NSR applies to pollutants for which ambient concentration levels are higher than NAAQS.	SDAPCD with EPA oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.1
CAA §401 (Title IV), 42 USC §7651 (Acid Rain Program)	Requires quantification of NO_2 and SO_2 emissions, and requires operator to hold allowances.	SDAPCD with EPA oversight	Issues Acid Rain permit after review of application	Application to be submitted 18 months prior to start of operation.	§5.2.6.1
CAA §501 (Title V), 42 USC §7661 (Federal Operating Permits Program)	Establishes comprehensive permit program for major stationary sources.	SDAPCD with EPA oversight	Issues Title V permit after review of application	Application to be submitted 12 months after start of operation.	§5.2.6.1
CAA §111, 42 USC §7411, 40 CFR Part 60 (New Source Performance Standards [NSPS])	Establishes national standards of performance for new stationary sources.	SDAPCD with EPA oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.1
CAA §112, 42 USC §7412, 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants [NESHAPs])	Establishes national emission standards for hazardous air pollutants.	SDAPCD with EPA oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.1

LORS	Purpose	Regulating Agency	Permit or Approval	Schedule and Status of Permit	Conformance (Section)
State					
California Health & Safety Code (H&SC) §41700 (Nuisance Regulation)	Prohibits discharge of such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance	SDAPCD with CARB oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.2
H&SC §44300-44384; California Code of Regulations (CCR) §93300-93347 (Toxic "Hot Spots" Act)	Requires preparation and biennial updating of facility emission inventory of hazardous substances; risk assessments.	SDAPCD with CARB oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.2
California Public Resources Code §25523(a); 20 CCR §1752, 2300-2309 (CEC & CARB Memorandum of Understanding)	Requires that CEC's decision on AFC include requirements to assure protection of environmental quality; AFC required to address air quality protection.	CEC	After project review, issues conditions of certification that includes the conditions in the FDOC		§5.2.6.2
Global Warming Solutions Act and other GHG reduction measures	Minimize emissions of GHG from all sources in CA; operator must purchase and surrender GHG allowances	CARB	CARB approval of GHG reporting and cap and trade compliance	Agency approval on an annual basis after operation	§5.2.6.2
Local					
California Health & Safety Code (H&SC) §40001 (Air pollution--general)	Prohibit emissions and other discharges (such as smoke and odors) from specific sources of air pollution in excess of specified levels.	SDAPCD with CARB oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.3
SDAPCD Regulation II, Rule 10 (Permits required) and Rule 20.5 (Power Plants)	Administers air quality regulation program for power plants	SDAPCD with CARB oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.3
SDAPCD Regulation II, Rule 20.3 (New Source Review)	Establishes criteria for siting new and modified emission sources.	SDAPCD with CARB oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.3
SDAPCD Regulation XII, Rule 1200 (Toxic Air Contaminants New Source Review)	Establishes procedures for review and control of toxic air contaminants from new sources	SDAPCD with CARB oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.3
SDAPCD Regulation X, Standards of Performance for New Stationary Sources	Incorporates federal NSPS standards.	SDAPCD with CARB oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.3

LORS	Purpose	Regulating Agency	Permit or Approval	Schedule and Status of Permit	Conformance (Section)
SDAPCD Rules 1401, 1410, and 1412 (Federal permits)	Implements Acid Rain and Title V permit programs	SDAPCD with EPA oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.3
SDAPCD Rule 20.3 (d)(4)	Public Notification Requirement	SDAPCD with CARB oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.3
SDAPCD Regulation III (Permit Fees)	Permit fees	SDAPCD		Payment of fees required at time of application	§5.2.6.3
SDAPCD Rule 50 (Visible Emissions)	Prohibits visible emissions above certain levels.	SDAPCD with CARB oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.3
SDAPCD Rule 51 (Nuisance)	Prohibit emissions and other discharges (such as smoke and odors) from specific sources of air pollution in excess of specified levels.	SDAPCD with CARB oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.3
SDAPCD Rule 52 (Particulate Matter)	Limits emissions of particulate matter	SDAPCD with CARB oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.3
SDAPCD Rule 62 (Fuel Sulfur)	Limits fuel sulfur content	SDAPCD with CARB oversight	After project review, issues FDOC/ATC with conditions limiting emissions.	Agency approval to be obtained before start of construction	§5.2.6.3

5.2.4 Environmental Consequences

This section evaluates the potential air quality impacts of the project. Project impacts would be considered significant if emissions from the project cause or contribute to a violation of an ambient air quality standard. A project causes or contributes to a violation of an ambient air quality standard if it has a non-trivial impact at a time and location where a violation of an ambient air quality standard occurs.

Project operating emissions of nonattainment pollutants and their precursors will be offset to ensure that the project will result in no net regional increase in annual emissions of nonattainment pollutants. Emissions estimates for all aspects of both construction and operation of the project are presented in this subsection. Dispersion modeling was conducted to determine project impacts on ambient air quality, and those results are also presented in this section, along with a discussion of dispersion model selection and the selection of model input data (i.e., emissions scenarios and release parameters, building wake effects, meteorological data, and receptor locations). Documentation that the project will comply with applicable local, state, and federal air quality regulatory requirements is also provided.

5.2.4.1 Construction Emissions

Emissions during the construction phase of the project have been estimated, including an assessment of emissions from vehicle and equipment exhaust and the fugitive dust generated from vehicle movement and material handling. A dispersion modeling analysis was conducted based on these emissions. A detailed analysis of the construction emissions and associated ambient impacts is included in Appendix G-2. The results of the analysis indicate that the maximum construction impacts will be below the state and federal standards for all the criteria pollutants emitted. The best available emission control techniques will be used. The project construction impacts are not unusual in comparison to most construction sites; construction sites that use good dust suppression techniques and low-emitting vehicles typically do not cause violations of air quality standards.

The primary emission sources during construction will include exhaust from heavy construction equipment and vehicles and fugitive dust generated in areas disturbed by grading, excavating, and erection of facility structures. The projected construction schedule has a duration of 16 months, during which different areas within the proposed site and a nearby temporary laydown area will be disturbed. Estimated land disturbance for major construction activities is summarized in Section 3.0, Facility Description.

Construction equipment and vehicle exhaust emissions were estimated using equipment lists and construction scheduling information provided by the project design engineering firm, which are presented in Section 3.0, Facility Description, and Appendix G-2. The California Air Resources Board (CARB) OFFROAD2007 and EMFAC2007 models were used to generate equipment-specific emission factors for all criteria pollutants for diesel-fueled construction equipment and for on-road vehicles, respectively. Assumptions used in calculating project construction emissions included a 16-month construction period; five construction days per week; and a single-shift, eight-hour workday. The list of fueled equipment needed during each month of the construction effort (see Table 5.2-13) served as the basis for estimating pollutant emissions

throughout the term of construction and helped to identify the periods of probable maximum short-term emissions.

Fugitive dust emissions resulting from on-site soil disturbances were estimated using EPA AP-42 emission factors activities including bulldozing and dirt-pushing, travel on paved and unpaved roads, material handling, and wind erosion to storage of aggregate materials. A combined dust control efficiency of 92 percent was assumed to be achieved for traveling on unpaved surfaces at the project site and temporary construction area activities by the mitigation measures of frequent watering and limiting speeds to 15 miles per hour.

TABLE 5.2-13
ESTIMATED CONSTRUCTION EQUIPMENT/VEHICLE USAGE

Equipment/Vehicles	Horsepower (approx.)	Month of Construction (Unit: # per day) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Off-Road Equipment																	
Hydro Crane 35-50 Ton RT	200					1	1	1	1	1	1	1	1				
RT 760 - 60 ton Crane	250		1	1	1	2	2	2	2	2	2	2	1				
Hydro Crane 75-80 Ton RT	250									1	1	1	1	1	1	1	1
2250 Manitowoc 300 Ton (track mounted crane)	420					1	1	1	1	1	1						
40' - 60' Manlift	85					3	5	8	9	8	6	4	2				
90' Manlift	85					2	3	4	6	4	4	2	2				
Forklift	100	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1
Diesel Welder 400 Amp	22		2	2	2	2	2	2	3	3	3	3	2	2	2	1	1
185 CFM Compressor	49	2	2	2	2	2	2	2	2	2	2	2	1	1			
Light Tower 5 KW	22	2	3	3	3	3	3	3	3	3	3	3	2	1	1	1	1
Water Truck 4000 Gal	225	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Track 330 Excavator	268	1	1	1	1	1											
RT Hoe 710 (Backhoe)	150		2	2	2	2	1	1	1	1	1	1	1				
Roller	100		1	1	1	1	1	1	1	1	1	1	1	1	1		1
950/960 Loader	280		2	2	2	2	1	1	1	1	1	1	1	1	1		
Cat D6 Dozer	250	1	1	1													
Dump Truck	250	1	1	1													
Grader	200	1	1	1									1	1	1		
Fusion Machine	22	3	3	3	3	3	3										
Asphalt Paver	120																1
Paving Equipment	120																1
On-Road Vehicles																	
Pickup trucks		27	28	28	39	39	42	37	37	36	36	31	30	24	18	17	
Concrete Deliveries			6	6	6	6	6	3	1	1	1						
Light/Medium Deliveries		3	3	6	12	15	21	21	21	21	21	21	21	21	15	15	
HD Truck Delivery						1	1	1	1	1							
Construction workers		50	90	118	164	181	216	242	284	283	236	188	124	83	54	32	29

Notes:
1. Construction schedule is provided by the Applicant.
- Total month construction 16 months
- Days per week 5 days
- Days per month 22 days
- Hours per day 8 hours

2. Construction phases are provided by the Applicant and listed as follows:
- Clearing and grubbing month 1
- Underground water line relocation month 2
- Access road widening work month 1-2
- Site grading month 2-3
- Underground gas and waste water linear month 2-3
- Relocation of the reclaimed/recycled water line month 2-3
- Facilities building month 4-15
- Lateral construction month 10-11
- Asphalt paving month 16

3. Delivery trips per day, distance, and origins are based on the information provided by the Applicant and assumptions.
4. Worker passenger vehicles will park in the laydown area so there will be no one traveling on site.
5. It is assumed the numbers of worker passenger vehicles are the numbers of workers divided by 1.5.

Emissions from on-road delivery trucks and worker commute trips were estimated using trip generation information presented in Table 3.9-2A in Section 3.9 and emission factors provided by CARB's EMFAC2007 model. Construction workers were assumed to commute to the proposed project site from locations within the greater San Diego area.

The short-term maximum emissions were calculated using Month 8 for construction equipment and Month 2 for fugitive dust. Activities in Month 8 include building and facility construction. Activities in Month 2 are primarily grading and other site preparation activities. Annual emissions were based on the worst 12 consecutive months of the construction period, which were Months 1-12 of the 16-month schedule for combustion emissions, and Months 2-13 for fugitive dust.

Maximum daily construction emissions are shown in Table 5.2-14. Maximum annual construction emissions are shown in Table 5.2-15. Modeled impacts are shown in Table 5.2-17.

TABLE 5.2-14
MAXIMUM DAILY CONSTRUCTION EMISSIONS, POUNDS PER DAY
MONTH 8 (COMBUSTION)
MONTH 2 (FUGITIVE DUST)

	NO_x	CO	VOC	SO_x	PM_{10}	$PM_{2.5}$
Onsite						
Construction Equipment	40.7	24.3	4.1	0.0	1.6	1.6
Fugitive Dust	--	--	--	--	19.7	2.9
Offsite						
Worker Travel, Truck Deliveries	11.2	63.8	6.3	0.1	0.1	0.1
Total	51.9	88.1	10.4	0.1	21.4	4.6

Notes:
PM_{10} = particulate matter less than 10 micrometers in diameter
$PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter
VOC = volatile organic compound
CO = carbon monoxide
NO_x = nitrogen oxide(s)
SO_x = sulfur oxide(s)

TABLE 5.2-15
MAXIMUM ANNUAL CONSTRUCTION EMISSIONS, TONS PER YEAR

	NO_x	CO	VOC	SO_x	$PM_{2.5}$	PM_{10}
Onsite						
Construction Equipment	4.7	2.3	0.4	0.0	0.2	0.2
Fugitive Dust	--	--	--	--	2.5	0.6
Offsite						
Worker Travel, Truck Deliveries	0.8	2.6	0.3	0.0	0.0	0.0
Total	5.5	4.9	0.7	0.0	0.5	1.9

Notes:
PM_{10} = particulate matter less than 10 micrometers in diameter
$PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter
VOC = volatile organic compound
CO = carbon monoxide
NO_x = nitrogen oxides
SO_x = sulfur oxides

5.2.4.2 Emitting Units

Key operating parameters are summarized below. Additional information relating to the fuel characteristics, heat rate, and startup and operating limits of PPEC may be found in Section 3.0, Facility Description, and Appendix G-3.

Gas Turbines (each, of three)

- LMS100 simple cycle combustion gas turbines
- 4,000 hours per year normal operation plus 500 startup/shutdown cycles (per turbine)
- Fueled exclusively with natural gas (see Table 5.2-16 for nominal natural gas fuel properties)

Partial Dry Cooling Tower

- 23,520 GPM water circulation rate
- Maximum TDS: 5,600 ppmw (4.67 cycles of concentration)
- 12 cells
- 0.001% drift rate
- 4,337 hours per year of full operation (more hours per year at proportionately reduced water circulation rate if all three turbines not fired simultaneously)

TABLE 5.2-16
NOMINAL FUEL PROPERTIES—NATURAL GAS

Component Analysis		Chemical Analysis	
Component	Average Concentration, Volume	Constituent	Percent by Weight
CH_4	95.88%	C	72.93 %
C_2H_6	1.85%	H	23.85 %
C_3H_8	0.32%	N	1.16 %
C_4H_{10}	0.11%	O	2.05 %
C_5H_{12}	0.03%	S	0.75 gr/100 scf
N_2	0.70%	Higher Heating Value	1,019 Btu/scf 22,840 Btu/lb
CO_2	1.08%		
S	<0.0001%		

5.2.4.3 Turbine Commissioning

The commissioning period begins when the GE model LMS100 natural gas-fired turbines are prepared for first fire and ends upon successful completion of initial performance testing. The commissioning process entails several relatively short periods of operation prior to and during installation and testing of the SCR and CO catalyst systems. During these periods, NO_x emissions will be higher than normal operating levels because the NO_x emissions control system would not be fully operational and because the gas turbine would not be tuned for optimum performance. CO emissions would also be higher than normal because turbine performance would not be optimized and the CO emissions control system would not be fully operational.

Turbine commissioning activities can be broken down into five separate test periods, as described below. The first four periods occur prior to SCR system and oxidation catalyst installation, when the combustor is being tuned. In the first four phases, NOx emissions will be higher than normal because the NO_x emissions control system would not be functioning and because the combustors would not be tuned for optimum performance. The fifth phase occurs when the combustors have been tuned but the SCR and oxidation catalyst installation is not complete, and other parts of the turbine operating system are being checked out. Because the control system installation would not be complete, NO_x and CO emissions would be higher than for normal operations.

Commissioning activities are discussed in more detail below. Emission estimates are based on vendor-supplied emission rates for the various stages of commissioning. The estimated duration of each stage is based on the recent commissioning of the four GE LMS100 turbines at the Panoche Energy Center. To be conservative, the average duration of each stage during commissioning at Panoche was doubled for the expected commissioning of turbines at PPEC. Total commissioning at Panoche lasted 56 turbine operating hours for each turbine, whereas the total commissioning for PPEC is estimated to be up to 112 operating hours for each turbine. At the conclusion of the commissioning period, operational emissions rates will be at the controlled rates discussed below in this section. The required continuous emissions monitoring system (CEMS) for NO_x and CO will be calibrated and operating, but will not be certified until after the commissioning period.

Emissions associated with commissioning activities at PPEC are projected from actual commissioning experience at the Panoche Energy Center and from estimated emission data provided by General Electric. The five commissioning phases likely to be required for each LMS100 turbine are as follows:

- First Fire (operate unit at synchronous idle and perform a system check – 16 hours);
- Sync/AVR Testing (synchronize unit to the electrical grid and operate the unit at various loads to test the voltage regulator – 12 hours);
- SCR Burn-out/AVR Testing (operate the unit at various loads to test the voltage regulator – 20 hours);
- Water Injection Mapping (commissioning of the NO_x water injection system – 32 hours); and

- SCR Commissioning (unit operation to adjust SCR control – 32 hours).

During the commissioning activities, worst-case hourly NO_x and CO emission rates for each turbine are expected to be 50.0 lb/hour and 75.0 lb/hour, respectively. Actual activity durations will vary, but total commissioning emissions for each turbine are not expected to exceed totals based on these worst-case hourly rates over 112 hours of testing for each turbine (i.e., 3,700 lbs of NOx and 6,320 lbs of CO). The turbine commissioning emissions for all pollutants in each phase are presented in Table 5.2-17. In all likelihood, the commissioning of individual turbines will take place sequentially, but a worst-case emission scenario was modeled assuming all three turbines were commissioned at the same time (see the Air Quality Modeling CD submitted with this AFC).

During the first year of operation after turbines are commissioned, PPEC will operate in such a way as to ensure that the annual emissions limit for normal operations, shown in Table 5.2-20, will not be exceeded, even with the emissions from commissioning activities included.

TABLE 5.2-17
COMMISSIONING EMISSIONS (PER TURBINE)

			Pollutant Emission Rates				
Activity	Duration (Hours)	Heat Input (MMBTU/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)	SO_2 (lb/hr)	PM_{10} (lb/hr)
First Fire	16	75	11.3	45	1.1	0.17	5.5
Sync/AVR Testing	12	500	50	75	5	0.6	5.5
SCR Burnout/AVR Testing	20	500	50	75	5	0.6	5.5
Water Injection Mapping	32	500	50	75	5	0.6	5.5
Ammonia Injection Tuning	32	500	10	25	1.5	0.6	5.5

Notes:
PM_{10} = particulate matter less than 10 micrometers in diameter
$PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter
VOC = volatile organic compounds
CO = carbon monoxide
NO_x = nitrogen oxides
SO_x = sulfur oxides

5.2.4.4 Operational Emissions

The principal emission sources of the project will be the three simple-cycle combustion turbine generators (CTGs), which will burn exclusively natural gas fuel. Annual operational emissions from each of the three project CTGs were estimated by summing the emissions from 4,000 hours per year of normal operations plus emissions associated with 500 startup and shutdown events for each CTG.

The only other source of emissions from project operations is the partial dry cooling tower. Emissions from this source are very low, especially when compared with emissions from combined cycle plants, because this cooling is used only for lubricating oil. Most of the cooling requirements for a combined cycle plant are associated with condensing the water used in the steam turbines. The cooling tower will emit drift droplets containing dissolved solids; when the water in the suspended droplets evaporates, the solids remain in the air as particulate matter.

Criteria pollutant emissions from the gas turbines are summarized in Table 5.2-18. Emissions of NO_x, CO, and VOC from the CTGs were calculated from emission exhaust concentration limits (expressed as ppmv @ 15 percent O_2) and the exhaust flow rates from vendor performance data. The proposed NO_x emission limit of 2.5 ppmv reflects the application of SCR. The proposed VOC emission limit of 2.0 ppmv reflects the use of good combustion practices. The proposed CO emission limit of 4.0 ppmv reflects the expected performance of the oxidation catalyst.

Maximum hourly PM_{10} emissions reflect expected turbine performance, based on emission limits from similar installations. For regulatory purposes, all of the particulate matter emitted from the fuel burning equipment and the cooling tower is assumed to be less than 2.5 microns in diameter. All references to PM_{10} from project sources include $PM_{2.5}$ as well, even though some fraction of PM_{10} emissions are likely to be larger than 2.5 microns in size.

SO_2 emissions were calculated from the heat input (in MMBtu) and an SO_2 emission factor (in lb/MMBtu). SO_2 emissions were calculated based on the proposed maximum allowable fuel sulfur content of 0.75 grain per 100 standard cubic feet (scf).

TABLE 5.1-18
MAXIMUM EMISSION RATES—COMBUSTION TURBINES

Pollutant	ppmv @ 15% O2	lb/MMBtu	lb/hr
Combustion Turbines (each)			
NO_x	2.5	0.0091	8.18
SO_2[1]	0.4	0.0021	1.90
CO	4.0	0.0088	7.97
VOC	2.0	0.0025	2.28
$PM_{10}/PM_{2.5}$[2]	—	—	5.5

Notes:
NO_x, CO, VOC, and PM_{10} emission rates exclude startups and shutdowns (see Table 5.1-19).
[1] Based on maximum natural gas sulfur content of 0.75 gr/100 scf. See text.
[2] Includes front and back half.

Combustion turbine performance was evaluated for a number of operating scenarios with different turbine loads (ranging from 50% load to 100% load), and ambient temperatures ranging from a low of 30°F to a high of 110°F. The maximum hourly emissions for all criteria pollutants from the turbine during normal operations are expected to occur under the conditions with the highest firing rate: 100% load, use of evaporative cooling, and 72°F ambient temperature.

The expected emissions and durations associated with individual turbine startup and shutdown events are summarized in Table 5.2-19. Based on vendor information, each turbine startup is expected to take 30 minutes; each turbine shutdown is expected to be completed within 10.5 minutes. The 30-minute startup NO_x emission rate was calculated using GE vendor data during the first nine minutes of the startup, and Panoche Energy Center Continuous Emissions Monitoring System (CEMS) data for minutes 10-30. The Panoche Energy Center is comprised of four GE LMS100 turbines operating in service similar to the proposed PPEC. To be conservative, a 20 percent buffer of additional emissions for each minute was added to the Panoche Energy Center actual startup emission data. Because hours that include startup and shutdown events may have higher NO_x, CO, and VOC emissions than the normal operating

condition with functioning SCR and CO catalyst, they were incorporated into the worst-case short- and long-term turbine emissions estimates in the model simulations pertaining to these pollutants.

TABLE 5.2-19
STARTUP AND SHUTDOWN EMISSIONS (PER TURBINE)

		Pollutant Emission Rates				
Activity	Duration (minutes)	NO_x (lb/event)	CO (lb/event)	VOC (lb/event)	SO_2 (lb/event)	PM_{10} (lb/event)
Startup	30	22.5	17.9	4.7	0.66	2.75
Shutdown	10.5	6.0	47.0	3.0	0.08	0.96

Notes:
PM_{10} = particulate matter less than 10 micrometers in diameter
$PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter
VOC = volatile organic compound
CO = carbon monoxide
NO_x = nitrogen oxide(s)
SO_x = sulfur oxide(s)

The maximum expected emissions for each averaging period were used in the compliance demonstration modeling, and are summarized in Tables 5.2-20 and 5.2-21.

TABLE 5.2-20
EMISSION SUMMARY

Equipment	NO_x Max lb/hr	NO_x Max lb/day	NO_x Total TPY	$S0_x$ Max lb/hr	$S0_x$ Max lb/day	$S0_x$ Total TPY	CO Max lb/hr	CO Max lb/day	CO Total TPY	VOC Max lb/hr	VOC Max lb/day	VOC Total TPY	PM_{10} Max lb/hr	PM_{10} Max lb/day	PM_{10} Total TPY
Turbine 1	26.6	288.1	23.5	1.9	45.6	1.4	53.5	428.9	32.1	6.5	85.9	6.9	5.5	132.0	11.9
Turbine 2	26.6	288.1	23.5	1.9	45.6	1.4	53.5	428.9	32.1	6.5	85.9	6.9	5.5	132.0	11.9
Turbine 3	26.6	288.1	23.5	1.9	45.6	1.4	53.5	428.9	32.1	6.5	85.9	6.9	5.5	132.0	11.9
Cooling Tower	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	15.8	1.4
Total	79.9	864.3	70.4	5.7	136.8	4.1	160.5	1,287	96.4	19.6	257.7	20.7	17.2	411.8	37.2

Notes:
1. Maximum hourly turbine emissions based on startup emissions for NO_x, shutdown emissions for CO, and worst case normal operations for other pollutants. See Appendix G-3, Table G-3.4 and G-3.5 for calculation of hourly emissions during startup/shutdown.
2. Annual emissions based on 4000 hours of normal operations at 100% load and average ambient temperature plus 500 startup and shutdown events.

TABLE 5.2-21
CRITERIA POLLUTANT SOURCES AND EMISSION TOTALS FOR MODELING

Averaging Time	Operating Equipment	Pollutant	Emission (lbs) Entire Period: Each CTG	Emission (lbs) Entire Period: Cooling System
1-hour	**NO_x**: One startup (all turbines) with remainder of the hour at worst case normal operation..	NO_x	26.6	
	CO: One shutdown (all turbines) with remainder of the hour at worst case normal operation.	CO	53.5	
	SO_2: Full load at worst case normal operation	SO_2	1.9	
3-hour	**SO_2**: Full load at worst case normal operation.	SO_2	5.7	
8-hour	**CO**: 8 hours at worst case 1-hour emissions (screening assessment)	CO	428	
24-hour	**SO_2**: Full load at worst case normal operation.	SO_2	136.8	
	PM_{10}: Full load at worst case normal operation plus cooling system	$PM_{10}/PM_{2.5}$	132.0	23.7
Annual	**All**: Each turbine operates for 4,000 hours at full load and annual average ambient temperature plus 500 startups, 500 shutdowns (4,337 total hours). Cooling system operates 4,337 hours.	NO_x	46,930	
		SO_2	2,745	
		$PM_{10}/PM_{2.5}$	23,840	2,855

Notes:
Emissions of SO_x for annual average based on fuel sulfur content of 0.25 gr/100 dscf. Emissions of SO_x for all other averaging times based on 0.75 gr/100 dscf.
PM_{10} = particulate matter less than 10 micrometers in diameter
$PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter
VOC = volatile organic compounds
CO = carbon monoxide
NO_x = nitrogen oxides
SO_x = sulfur oxides

5.2.4.5 Non-Criteria Pollutant Emissions

A health risk assessment was performed to determine the potential for public health impacts of non-criteria pollutants emitted by the project. Emissions are summarized in Table 5.2-22. The health risk assessment itself is presented in Section 5.16, Public Health.

TABLE 5.2-22
NON-CRITERIA POLLUTANT EMISSION TOTALS FOR MODELING

	Emissions (Per turbine)		Emissions (Total, 3 units)	
Pollutant	Lb/hr	TPY	Lb/hr	TPY
Turbines				
Ammonia	6.12E+00	1.33E+01	1.83E+01	3.98E+01
Propylene	3.37E-01	7.30E-01	1.01E+00	2.19E+00
Acetaldehyde	1.78E-02	3.86E-02	5.35E-02	1.16E-01
Acrolein	2.86E-03	6.19E-03	8.57E-03	1.86E-02
Benzene	5.33E-03	1.16E-02	1.60E-02	3.47E-02
1,3-Butadiene	1.92E-04	4.16E-04	5.75E-04	1.25E-03
Ethylbenzene	1.42E-02	3.09E-02	4.27E-02	9.26E-02
Formaldehyde	4.01E-01	8.69E-01	1.20E+00	2.61E+00
Hexane, n-	1.13E-01	2.45E-01	3.39E-01	7.36E-01
Naphthalene	5.81E-04	1.26E-03	1.74E-03	3.78E-03
PAHs (listed individually below)	2.86E-04	6.21E-04	8.59E-04	1.86E-03
Acenaphthene	8.30E-06	1.80E-05	2.49E-05	5.40E-05
Acenapthyene	6.42E-06	1.39E-05	1.93E-05	4.18E-05
Anthracene	1.48E-05	3.20E-05	4.43E-05	9.61E-05
Benzo(a)anthracene	9.87E-06	2.14E-05	2.96E-05	6.42E-05
Benzo(a)pyrene	6.07E-06	1.32E-05	1.82E-05	3.95E-05
Benzo(e)pyrene	2.38E-07	5.15E-07	7.13E-07	1.55E-06
Benzo(b)fluoranthrene	4.94E-06	1.07E-05	1.48E-05	3.21E-05
Benzo(k)fluoranthrene	4.81E-06	1.04E-05	1.44E-05	3.13E-05
Benzo(g,h,i)perylene	5.98E-06	1.30E-05	1.80E-05	3.89E-05
Chrysene	1.10E-05	2.39E-05	3.30E-05	7.16E-05
Dibenz(a,h)anthracene	1.03E-05	2.23E-05	3.08E-05	6.68E-05
Fluoranthene	1.89E-05	4.09E-05	5.66E-05	1.23E-04
Fluorene	2.53E-05	5.49E-05	7.60E-05	1.65E-04
Indeno(1,2,3-cd)pyrene	1.03E-05	2.23E-05	3.08E-05	6.68E-05
Phenanthrene	1.37E-04	2.97E-04	4.11E-04	8.92E-04
Pyrene	1.21E-05	2.63E-05	3.64E-05	7.90E-05
Propylene oxide	1.29E-02	2.80E-02	3.88E-02	8.41E-02
Toluene	5.81E-02	1.26E-01	1.74E-01	3.78E-01
Xylene	2.85E-02	6.19E-02	8.56E-02	1.86E-01
Cooling Tower				
Arsenic	9.90E-08	2.15E-07	9.90E-08	2.15E-07
Carbon Tetrachloride	1.16E-07	2.50E-07	1.16E-07	2.50E-07
Chlorine	1.27E-02	2.74E-02	1.27E-02	2.74E-02
Chromium	1.54E-07	3.34E-07	1.54E-07	3.34E-07
Copper	3.58E-07	7.75E-07	3.58E-07	7.75E-07
Fluoride	6.06E-05	1.31E-04	6.06E-05	1.31E-04
Lead	4.73E-08	1.03E-07	4.73E-08	1.03E-07
Total HAPs[1]				4.26

[1] Ammonia, propylene oxide, copper and fluoride are not HAPs so are not included in this total.

5.2.4.6 Greenhouse Gas Emissions

Potential maximum annual GHG emissions for the operational PPEC were calculated using the calculation methods and emission factors from the California Air Resources Board GHG Reporting Regulation.[1] Table 5.2-23 presents the estimated GHG emissions due to project operations in carbon dioxide equivalent [CO_2e]. Emissions of methane, nitrous oxide, and sulfur hexafluoride have been converted to carbon dioxide equivalents using GHG warming potentials of 21, 310, and 23,900 respectively. The estimated emissions include the combustion emissions for the three turbines. They also include sulfur hexafluoride leakage emissions from three switchyard circuit breakers.

One-time GHG emissions from construction activities are presented in Table 5.2-24.

Appendix G-3 presents supporting technical information and calculation spreadsheets used to develop emissions data for the various scenarios of the operational project.

TABLE 5.2-23
PROJECT GREENHOUSE GAS EMISSIONS

Unit	CO_2, metric tons/year	CH_4, metric tons/year[2]	N_2O, metric tons/year[2]	SF_6, metric tons/year[2]	CO_2eq, metric tons/yr[1]	CO_2, metric tons/MWh
CTGs	621,000	222	364	<1	621,500	0.477

[1] Includes CH_4, N_2O, and SF_6.
[2] Expressed as CO_2 equivalent

TABLE 5.2-24
CONSTRUCTION GREENHOUSE GAS EMISSIONS

Unit	CO_2, metric tons/year	CH_4, metric tons/year	N_2O, metric tons/year	CO_2eq, metric tons/yr[1]
Offroad Fuel Use	78	3.19E-03	6.38E-04	
Worker Travel	307	1.30E-02	2.60E-03	
Truck Deliveries	81	3.34E-03	6.68E-04	
TOTAL	466	1.95E-02	3.91E-03	467

5.2.4.7 Air Dispersion Modeling

An assessment of impacts from the PPEC on ambient air quality has been conducted using EPA-approved air quality dispersion models, following the modeling protocol submitted to the agencies in November 2010 (see Appendix G-8). These models are based on various mathematical descriptions of atmospheric diffusion and dispersion processes in which a pollutant source impact can be calculated over a given area.

The District has required use of meteorological and ambient data for the time period 2006 through 2008. All results in this section are based on that time period. EPA requires use of five years' worth of data (if available) for the PSD permit. The supplemental analysis in support of

[1] CARB, *Regulation for the Mandatory Reporting of Greenhouse Gas Emissions, Appendix A*, December 2007

the PSD application will be submitted at a later date, after receipt of the necessary information from the District, and will be based on the five-year time period 2004 through 2008.

The impact analysis was used to determine the worst-case ground-level impacts of the Project. The results were compared with established state and federal ambient air quality standards and PSD significance levels. If the standards are not exceeded under worst-case conditions then it is inferred that, in the operation of the facility, no exceedances are expected under any conditions. In accordance with the air quality impact analysis guidelines developed by EPA (40 CFR Part 51, Appendix W: Guideline on Air Quality Models) and CARB (Reference Document for California Statewide Modeling Guideline, April 1989), the ground-level impact analysis includes the following assessments:

- Impacts in simple, intermediate, and complex terrain;
- Aerodynamic effects (downwash) due to nearby building(s) and structures; and
- Impacts from inversion breakup (fumigation).

Simple, intermediate, and complex terrain impacts were assessed for all meteorological conditions that would limit the amount of final plume rise. Plume impaction on elevated terrain, such as on the slope of a nearby hill, can cause high ground-level concentrations, especially under stable atmospheric conditions. Another dispersion condition that can cause high ground-level pollutant concentrations is caused by building downwash. Building downwash can occur when wind speeds are high and a building or structure is in close proximity to the emission stack. This can result in building wake effects where the plume is drawn down toward the ground by the lower pressure region that exists in the lee side (downwind) of the building or structure.

Fumigation conditions occur when the plume is emitted into a low-lying layer of stable air (inversion) that then becomes unstable, resulting in a rapid mixing of pollutants towards the ground. The low mixing height that results from this condition allows little diffusion of the stack plume before it is carried downwind to the ground. Although fumigation conditions rarely last as long as an hour, relatively high ground-level concentrations may be reached during that period. Fumigation tends to occur under clear skies and light winds, and is more prevalent in the summer.

The basic model equation used in this analysis assumes that the concentrations of emissions within a plume can be characterized by a Gaussian distribution about the centerline of the plume. Concentrations at any location downwind of a point source such as a stack can be determined from the following equation:

$$C(x,y,z,H) = \left(\frac{Q}{2\pi\sigma_y\sigma_z u}\right) * \left(e^{-1/2(y/\sigma_y)^2}\right) * \left(\left[e^{-1/2(z-H/\sigma_z)^2}\right] + \left[e^{-1/2(z+H/\sigma_z)^2}\right]\right)$$

Where:

C = the concentration in the air of the substance or pollutant in question

Q = the pollutant emission rate

σ_y,σ_z = the horizontal and vertical dispersion coefficients, respectively, at downwind distance x

u = the wind speed at the height of the plume center

x,y,z = the variables that define the 3-dimensional Cartesian coordinate system used; the downwind, crosswind, and vertical distances from the base of the stack

H = the height of the plume above the stack base (the sum of the height of the stack and the vertical distance that the plume rises due to the momentum and/or buoyancy of the plume)

Gaussian dispersion models are approved by EPA for regulatory use and are based on conservative assumptions (i.e., the models tend to over predict actual impacts by assuming steady-state conditions, no pollutant loss through conservation of mass, no chemical reactions, etc.). The EPA models were used to determine if ambient air quality standards would be exceeded, and whether a more accurate and sophisticated modeling procedure would be warranted to make the impact determination. The following sections describe:

- Screening modeling procedures;
- Refined air quality impact analysis;
- Existing ambient pollutant concentrations and preconstruction monitoring;
- Results of the ambient air quality modeling analyses; and
- PSD increment consumption.

5.2.4.8 Model Selection

The screening and refined air quality impact analyses were performed using the American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee (AERMIC) model, also known as AERMOD (current version 09292). The AERMOD model is a steady-state, multiple-source, Gaussian dispersion model designed for use with stack emission sources situated in terrain where ground elevations can exceed the stack heights of the emission sources (i.e. complex terrain).[2] The model is capable of estimating concentrations for a wide range of averaging times (from one hour to one year). Inputs required by the AERMOD model include the following:

- Model options;
- Meteorological data;
- Source data; and

[2] AERMOD was adopted in November 2005 as a guideline model by EPA as a replacement for ISCST3. AERMOD incorporates an improved downwash algorithm as compared to ISCST3 (Federal Register, November 9, 2005; Volume 70, Number 216, Pages 68218-68261).

- Receptor data.

Model options refer to user selections that account for conditions specific to the area being modeled or to the emissions source that needs to be examined. Examples of model options include use of site-specific vertical profiles of wind speed and temperature; consideration of stack and building wake effects; and time-dependent exponential decay of pollutants. The model supplies recommended default options for the user for some of these parameters.

AERMOD uses hourly meteorological data to characterize plume dispersion. The representativeness of the data is dependent on the proximity of the meteorological monitoring site to the area under consideration, the complexity of the terrain, the exposure of the meteorological monitoring site, and the period of time during which the data are collected. The District provided a meteorological data set appropriate for use with AERMOD. The data set combined surface meteorological data (e.g., wind speed and direction, temperature) from the District's Otay Mesa/Paseo International monitoring station and upper air data from the Marine Corps Air Station Miramar (MCAS Miramar).

5.2.4.9 Good Engineering Practice Stack Height Analysis

For the purposes of modeling, a stack height beyond what is required by Good Engineering Practices (GEP) is not allowed (40 CFR Part 60 §51.164). However, this requirement does not place a limit on the actual constructed height of a stack. GEP as used in modeling analyses is the height necessary to ensure that emissions from the stack do not result in excessive concentrations of any air pollutant in the immediate vicinity of the source as a result of atmospheric downwash, eddies, or wakes that may be created by the source itself, nearby structures, or nearby terrain obstacles. In addition, the GEP stack height modeling restriction assures that any required regulatory control measure is not compromised by the effect of that portion of the stack that exceeds the GEP height. The EPA guidance ("Guideline for Determination of Good Engineering Practice Stack Height," Revised 6/85) for determining GEP stack height indicates that GEP is the greater of 65 meters or H_g, where H_g is calculated as follows:

$$H_g = H + 1.5L$$

Where:

H_g = Good Engineering Practice stack height, measured from the ground-level elevation at the base of the stack

H = height of nearby structure(s) measured from the ground-level elevation at the base of the stack

L = lesser dimension, height or maximum projected width, of nearby structure(s)

The turbine stack heights, at 100 feet, are less than the GEP limit of 65 meters (213 feet). Stack heights therefore do not need to be adjusted for GEP.

5.2.4.10 Receptor Grid Selection and Coverage

Receptor and source base elevations were determined from USGS National Elevation Dataset (NED) data in the GeoTIFF format at a horizontal resolution of 1 arc-second (approximately 30 meters). All coordinates were referenced to UTM North American Datum 1983 (NAD83), Zone 11. The AERMOD receptor elevations were interpolated among the DEM nodes according to standard AERMAP procedure. For determining concentrations in elevated terrain, the AERMAP terrain preprocessor receptor-output (ROU) file option were chosen; hills were not imported into AERMOD for CTDM-like processing.

Cartesian coordinate receptor grids were used to provide adequate spatial coverage surrounding the project area for assessing ground-level pollution concentrations, to identify the extent of significant impacts, and to identify maximum impact locations. A 250-meter resolution coarse receptor grid was developed and extended outwards at least ten km (or more as necessary to calculate the significant impact area). For the full impact analyses, a nested grid was developed to fully represent the maximum impact area(s). This grid has 25-meter resolution along the facility fence-line in a single tier of receptors composed of four segments extending out to 100 meters from the fenceline, 100-meter resolution from 100 meters to 1,000 meters from the fenceline, and 250-meter spacing out to at least 10 km from the most distant source modeled, not to exceed 50 km from the project site. Additional refined receptor grids with 25-meter resolution were placed around the maximum first-high and maximum second-high coarse grid impacts and extended out 1,000 meters in all directions. Concentrations within the facility fenceline were not calculated. To simplify post-processing requirements, receptor locations at which the NO_2, $PM_{2.5}$, and PM_{10} significant impact levels were not exceeded were not included in PSD analyses for these pollutants.

The regions imported in Geographical Coordinates for the USGS National Elevation Dataset (NED) data are bounded as follows:

South West corner: Lat: 32.38, Lon: -117.82;

North East corner: Lat: 33.1, Lon: -116.26.

The analysis was limited to impacts in the United States.

5.2.4.11 Meteorological Data Selection

The District provided a meteorological dataset already processed by AERMET to generate AERMOD-compatible meteorological data for air dispersion modeling. The surface meteorological data were recorded at the District's Otay Mesa-Paseo International monitoring station, and the upper air data were recorded at the MCAS Miramar (No. 03190). EPA defines the term "on-site data" to mean data that would be representative of atmospheric dispersion conditions at the source and at locations where the source may have a significant impact on air quality. Representativeness has been defined in the PSD Monitoring Guideline as data that characterize the air quality for the general area in which the proposed project would be constructed and operated. The meteorological data requirement originates in the Clean Air Act at Section 165(e)(1), which requires an analysis "of the ambient air quality at the proposed site

and in areas which may be affected by emissions from such facility for each pollutant subject to regulation under [the Act] which will be emitted from such facility."

This requirement and EPA's guidance on the use of on-site monitoring data are also outlined in the *On-Site Meteorological Program Guidance for Regulatory Modeling Applications*.[3] The representativeness of the data depends on (a) the proximity of the meteorological monitoring site to the area under consideration, (b) the complexity of the topography of the area, (c) the exposure of the meteorological sensors, and (d) the period of time during which the data are collected. The District has determined, and the applicant concurs, that the District's Otay Mesa meteorological data are representative of conditions at the project site.

Representativeness is best evaluated when sites are climatologically similar, as are the project site and the Otay Mesa-Paseo International meteorological monitoring station. The Otay Mesa-Paseo International meteorological monitoring station is in close proximity to the proposed project site (distance between the two locations is approximately 1.9 miles with no significant intervening terrain features), and the same large-scale topographic features located to the east and north that influence the meteorological data monitoring station also influence the proposed project site in the same manner.

Upper air meteorological data are taken from soundings obtained at the Marine Corps Air Station at Miramar, California, located approximately 24 miles northwest of the project. No other upper air meteorological monitoring stations are located in the San Diego Air Basin. The next closest upper air station in California is located at Oakland International Airport.

5.2.4.12 Ambient Background Data Selection

Background ambient air quality data for the project area from the monitoring site most representative of the conditions that exist at the proposed project site were used to represent regional background concentrations. The District has determined that the Chula Vista monitoring station provides the most representative ambient air quality background data for PM_{10}, $PM_{2.5}$, NO_2, SO_2, O_3, and CO. Although the monitoring site at Otay Mesa-Paseo International is closer to the project site than the Chula Vista station, the Otay Mesa station is strongly impacted by traffic coming across the border from Mexico, and is therefore not representative of regional background concentrations.

> *Several thousand border-crossing trucks passing near the monitor each day heavily impact PM measurements at this location. To better gauge ambient PM_{10} concentrations throughout the Otay Mesa area as a whole, a second monitor was recently established in Otay Mesa, two miles north of the existing monitor. The additional monitor is not unduly influenced by specific local PM sources*[4]

PM_{10} concentrations at the border station are about twice as high as maximum concentrations at the alternate site. The border trucks impact all combustion pollutant measurements at the Otay Mesa monitor, not just PM_{10}. In contrast, the Chula Vista station is not impacted by nearby sources, and is only nine miles from the project site.

[3] EPA, *Supplement A to the Guideline on Air Quality Models (Revised)*, 1987.
[4] SDAPCD, *Measures to Reduce Particulate Matter in San Diego County*, December 2005, p. 3-6

The five-year period 2004-2008 is the most recent five-year period for which all required data are available. This is the period for which PSD modeling will be performed. The District has selected the three-year period 2006-2008 for use in demonstrating compliance with District requirements; the same three-year period is used to address CEC requirements.

Processed data files were obtained from the District. Data for periods of time with invalid data were replaced by the District using data substitution procedures consistent with EPA guidance. Data substitution ensures that there will be no gaps in the data. This will prevent exclusion of modeled high impact hours because of missing monitoring data.

5.2.4.13 Construction Impacts

Section 5.2.4.1 describes the development of project emissions estimates over the planned 16-month construction period. An Excel workbook was created to estimate pollutant emissions from construction activities. Emissions from worker commuter trips to and from the project site and heavy trucks delivering materials to and from the site during specific construction activities were also included (see Appendix G-2).

Worst-case modeling was conducted for short-term averaging times using all combustion emissions from all construction equipment from Month 8 and dust emissions from activities in Month 2 (see Table 5.2-13 and 5.2-14). Annual emissions were based on Months 1-12 for combustion and Months 2-13 for dust emissions.

Based on information provided by the engineering design contractor and the emission estimates in Appendix G-2, the peak month in terms of air pollutant emissions is expected to be the sixth month of construction. All construction activities were assumed to occur during an eight-hour work day. The annual emissions were modeled for Months 1-12 for combustion emissions and Months 2-13 for fugitive dust emissions after a determination that this consecutive 12-month period will have a higher level of construction activity and exhaust and dust emissions than any other over the full 16 months of construction. The modeling was performed with no downwash. The emission sources for the construction site were grouped into three categories: exhaust emissions, construction dust emissions, and windblown dust emissions. The exhaust and construction dust emissions were modeled as three volume sources with a vertical dimension of 6 meters. Among the three volume sources, one was used to represent the construction dust and combustion exhaust sources from the facility site, and two were used to represent construction dust and combustion exhaust sources from the laydown area. Based on the width of the construction area, the horizontal dimension for the volume source at the facility site was set to 177.2 meters, with sigma-y = 18.6 meters; the horizontal dimension for each of the two volume sources at the laydown area was set to 102.7 meters, with sigma-y = 23.9 meters. The fugitive dust emissions from disturbed areas were represented for modeling purposes as area sources. To assess impacts from fugitive dust, the facility site and the laydown area were modeled as two single area sources covering a combined disturbed area of 14.4 acres. The effective plume height for these two area sources was set at 0.5 meters in the modeling analysis.

The PVMRM option of AERMOD was used to account for the role of ambient ozone levels on the atmospheric conversion rate of NO_x emissions (initially mostly in the form of nitric oxide) to NO_2 (the pollutant addressed by ambient standards). Hourly ozone measurements at the

SDAPCD Chula Vista monitoring station during the same three years of the meteorological input data set were used to support the PVMRM calculations.

Modeling results are shown in Table 5.2-25.

TABLE 5.2-25
MODELED MAXIMUM IMPACTS DURING CONSTRUCTION

Pollutant	Averaging Period	Maximum Predicted Impact (µg/m³)	Maximum Background Concentration (µg/m³)	Total Concentration[1] (µg/m³)	NAAQS (µg/m³)	CAAQS (µg/m³)
NO_2	1-hr	79	154	233	188	339
	Annual	6	32	38	100	57
SO_2	1-hr	0	45	45	196	655
	3-hr	0	34	34	1300	--
	24-hr	0	10	10	--	105
	Annual	0	8	8	80	--
CO	1-hr	63	4	67	40,000	23,000
	8-hr	34	2	36	10,000	20.000
PM_{10}	24-hr	21	57	78	150	50
	Annual	2.7	26.7	29.4	--	20
$PM_{2.5}$	24-hr	4.6	45.7	50.3	35	--
	Annual	0.2	12.5	12.7	15.0	12

[1] The total concentration shown in this table is the sum of the maximum predicted impact and the maximum measured background concentration. Because the maximum impact will not occur at the same time as the maximum background concentration, the actual maximum combined impact will be lower.

Table 5.2.25 shows that worst-case background concentrations of PM_{10} and $PM_{2.5}$ are already above the state standards, while with the exception of 24-hour average $PM_{2.5}$, they are below the federal standards. The project's modeled annual PM_{10} and $PM_{2.5}$ impacts are small relative to the background; the annual $PM_{2.5}$ impact is below the federal threshold for significance of 0.3 µg/m^3.

The project's construction emissions will result in potentially significant impacts for PM_{10} and $PM_{2.5}$. As discussed in Section 5.2.7, emission offsets will be provided prior to the commencement of construction that will fully mitigate these impacts.

Table 5.2.25 indicates that the sum of the worst-case construction NO_2 impact and the worst-case ambient background concentration is greater than the federal 1-hour NO_2 standard. However, this does not mean that the project would result in a violation of that standard. This is because compliance with the federal standard is based on the 3-year average of the 98th percentile of daily maximum 1-hour average concentrations. Because the federal one-hour NO_2 standard requires averaging the concentrations over three years, the NO_2 impacts during the single year of construction would not be likely to cause a new violation of the federal one-hour NO_2 standard. Because construction is expected to last only 16 months, construction impacts would be much lower during the second year and zero during the third year of a compliance assessment with the federal one-hour NO_2 standard.

The project's construction emissions will result in potentially significant impacts for PM_{10} and $PM_{2.5}$. Mitigation measures to be used to minimize emissions during construction are described in detail in Appendix G-2. As discussed in Section 5.2.7, emission offsets will be provided prior to the commencement of construction that will fully mitigate these impacts.

Table 5.2-25 shows that construction emissions will not cause new exceedances of any other state or federal air quality standards.

5.2.4.14 Commissioning Impacts

Air quality impacts during the commissioning period were determined using the emission rates in Appendix G-3. One-hour average NO_2 impacts during commissioning were modeled using AERMOD_PVMRM and concurrent Chula Vista ozone data. Modeled impacts are shown in Table 5.2-26.

TABLE 5.2-26
MODELED MAXIMUM IMPACTS DURING COMMISSIONING

Pollutant	Averaging Period	Maximum Predicted Impact (µg/m³)	Background Concentration (µg/m³)	Total Concentration[1] (µg/m³)	NAAQS (µg/m³)	CAAQS (µg/m³)
NO_2	1-hr	185	154	339	188	339
	Annual	--	32	--	NA	NA
SO_2	1-hr	3	45	48	196	655
	3-hr	1	34	35	1300	--
	24-hr	0	10	10	--	105
	Annual	--	8	--	NA	--
CO	1-hr	311	4	315	40,000	23,000
	8-hr	73	2	75	10,000	20.000
PM_{10}	24-hr	3	57	60	150	50
	Annual	--	26.7	--	--	NA
$PM_{2.5}$	24-hr	2.6	45.7	49	35	--
	Annual	--	12.5	--	NA	NA

[1] The total concentration shown in this table is the sum of the maximum predicted impact and the maximum measured background concentration. Because the maximum impact will not occur at the same time as the maximum background concentration, the actual maximum combined impact will be lower.

Table 5.2-26 shows that commissioning emissions will not cause new exceedances of any state or federal air quality standards, with the exception of the federal 1-hour NO_2 standard. (Because commissioning is a temporary activity lasting a few weeks at most, the annual standards are not applicable. Commissioning emissions will count toward the limit on annual emissions for the first year of normal operations, so the analysis of annual impacts in Section 5.2.4.15 is applicable to commissioning). The table shows that worst-case background concentrations of PM_{10} are already above the state standard, although they are below the federal standard. The project's 24-hour PM_{10} impacts are lower than the federal significance threshold of 5 µg/m^3 (see Table 5.2-11). The table indicates that commissioning activities may contribute to existing exceedances of the federal 24-hour average $PM_{2.5}$ standard; however, this standard is evaluated based on the three-year average of the 98th percentile concentration and commissioning emissions, as a short-term activity, are not likely to contribute significantly to an exceedance in fact.

Table 5.2.26 indicates that the sum of the worst-case commissioning NO_2 impacts and the worst-case ambient background concentration is greater than the federal one-hour NO_2 standard. However, this does not mean that the project would result in a violation of that standard. This is because compliance with the federal standard is based on the 3-year average of the 98th percentile of daily maximum 1-hour average concentrations. Because the federal one-hour NO_2 standard requires averaging the concentrations over three years, the NO_2 impacts during the single year of commissioning would not be likely to cause a new violation of the federal one-hour NO_2 standard.

The project's commissioning emissions will not result in potentially significant air quality impacts. Nevertheless, the emission offsets required for operating emissions will be provided before commissioning begins, further mitigating commissioning impacts.

5.2.4.15 Normal Operations Impact Analysis

Screening Modeling Analysis

To ensure the impacts analyzed were for maximum emission levels and worst-case dispersion conditions, a screening procedure was used to determine the inputs to the impact modeling for the new gas turbine. The screening procedure is used to identify the CTG operating conditions that would result in the maximum impacts on a pollutant-specific basis. The operating conditions examined in this screening analysis, along with their exhaust and emission characteristics, are shown in Appendix G-3. These operating conditions represent CTG operation at maximum, average, and minimum ambient temperatures (110°F, 63°F and 30°F), and at full load and minimum load (50 percent).

Ambient impacts for each of the six operating cases were modeled using EPA's AERMOD model and three years of meteorological data, as described above. The results of the unit impact analysis are presented in Appendix G-3. The analysis showed that for short-term averaging periods, modeled impacts were highest under cold temperature, peak load operating conditions. For 24-hour and annual averages, impacts were highest under cold temperature, peak load operating conditions, except for PM_{10} impacts which were highest under cold temperature, low load conditions.

Refined Analysis

The screening modeling analysis described above was used to determine which CTG operating parameters (emission rates and stack parameters) would be used in the subsequent refined analyses. The results of the AERMOD assessment for normal plant operations are summarized in Table 5.2-27. Listed below are the operating assumptions used in developing the emission rates for each emissions unit and averaging period.

1-hour and 3-hour averages

- CTG at peak load, cold temperature (maximum impact case from screening analysis)

8-hour average

- CTG at peak load, cold temperature (maximum impact case from screening analysis)

24-hour averages

- For $PM_{10}/PM_{2.5}$ impacts: CTG at low load, cold temperature (maximum impact case from screening analysis)
- For all other pollutants, CTG at peak load, cold temperature (maximum impact case from screening analysis)

Annual Averages

- For $PM_{10}/PM_{2.5}$ impacts: CTG at low load, cold temperature (maximum impact case from screening analysis)
- For all pollutants, CTG at peak load, annual average temperature (maximum impact case from screening analysis)
- For all pollutants, maximum annual emissions used to calculate average hourly emission rate

TABLE 5.2-27
SUMMARY OF MODELING RESULTS

Pollutant	Averaging Period	Modeled Concentration (µg/m³) Normal Operation	Startup	Inversion Breakup Fumigation[1]	PSD Significant Impact Level (µg/m³)
NO_2	1-hr	27	100	2.9	7.5[2]
	Annual	0.3	--	--	1.0
SO_2	1-hr	6	--	0.2	7.8[2]
	3-hr	3	--	0.1	25
	24-hr	1	--	0.1	5
	Annual	<0.1	--	--	1.0
CO	1-hr	26	202	5.8	2000
	8-hr	6	39	3.0	500
PM_{10}	24-hr	2.6	--	0.2	5
	Annual	0.26	--	--	1
$PM_{2.5}$	24-hr	2.6	--	0.2	1.2
	Annual	0.26	--	--	0.3

Notes:
[1] Inversion breakup fumigation is a short-term phenomenon and does not affect annual impacts.
[2] These are interim SILs and have not been formally adopted by EPA.

Startup and Shutdown Impacts Analysis

Short-term ambient NO_x and CO[5] impacts from the facility during turbine startup may be higher than impacts during normal operation because emission control systems are not fully operational during some part of the initial startup period when the turbine operates at low loads and the exhaust temperatures are low. (See Section 5.2.4.4 for a discussion of emissions.)

[5] SO_2 and $PM_{10}/PM_{2.5}$ emissions during startup are assumed to be the same as during normal operation.

For modeling the impacts during an hour including a startup or shutdown, CO and NO_x emission rates from Table 5.2-19 were used to calculate emissions during the transition period, while emissions during the remainder of the clock hour were assumed to be the maximum normal emission level. The NO_x and CO emission rates used for modeling startup impacts were shown in Table 5.2-21.

Turbine exhaust parameters for minimum load operation and under cold temperature conditions were used to characterize CTG exhaust during startup, because that operating case produced the highest modeled impacts in the screening analysis. Startup impacts were evaluated for the one-hour and eight-hour averaging periods for NO_x and CO. The emission rates and stack parameters used are shown in Appendix G-4. The results of the analysis are summarized in Table 5.2-27.

Inversion Breakup Fumigation Modeling

Inversion breakup fumigation occurs when a stable layer of air lies a short distance above the release point of a plume and unstable air lies below. Under these conditions, an exhaust plume may be drawn to the ground, causing high ground-level pollutant concentrations. Although fumigation conditions rarely last as long as one hour, relatively high ground-level concentrations may be reached during that time. For this analysis, fumigation was assumed to occur for up to 90 minutes, per EPA guidance.

The SCREEN3 model was used to evaluate maximum ground-level concentrations for short-term averaging periods (24 hours or less). Guidance from EPA[6] was followed in evaluating fumigation impacts. The maximum fumigation impact from this analysis, which is shown in more detail in Appendix G-3, showed that impacts under fumigation conditions are expected to be lower than the maximum concentrations calculated by AERMOD under downwash conditions. Inversion breakup impacts are also shown in Table 5.2-27.

For all pollutants, fumigation impacts are lower than the maximum predicted impacts from normal operations and meteorological conditions.

5.2.4.16 Demonstration of Compliance

The maximum facility impacts calculated from the modeling analyses described above are summarized in Table 5.2-27 above. The highest modeled short-term NO_2 and CO impacts are expected to occur under startup conditions; the highest impacts for other pollutants and averaging periods occur under normal operating conditions. To determine the project's air quality impacts, the modeled concentrations are added to the highest reported background ambient air concentrations and then compared to the applicable ambient air quality standards. The highest reported background ambient concentrations were discussed in Section 5.2.1.4 and the monitored concentrations during the past three years are shown in the Table 5.2-28. More detailed discussions of why the data collected at these stations are representative of ambient concentrations in the vicinity of the project are provided in Sections 5.2.1.4 and 5.2.4.12.

[6] EPA-454/R-92-019, "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised."

TABLE 5.2-28
SUMMARY OF RESULTS (MODELED MAXIMUM IMPACTS PLUS BACKGROUND)

Pollutant	Averaging Time	Maximum Predicted Impact (operating mode) (µg/m³)	Background Concentration (µg/m³)	Total Concentration (Maximum Impact plus Background) (µg/m³)	3 year Average of 98th Percentile of Total Concentration (µg/m³)	NAAQS (µg/m³)	CAAQS (µg/m³)
NO_2	1-hr	100 (startup)	154	254	156	188	339
	Annual	0.3 (normal)	32	32	--	100	57
SO_2	1-hr	6 (normal)	45	51	--	196	655
	3-hr	3 (normal)	34	37	--	1300	--
	24-hr	1 (normal)	10	11	--	--	105
	Annual	<0.1 (normal)	8	8	--	80	--
CO	1-hr	202 (shutdown)	4	206	--	40,000	23,000
	8-hr	39 (shutdown)	2	41	--	10,000	20.000
PM_{10}	24-hr	3 (normal)	57	60	--	150	50
	Annual	0.3 (normal)	26.7	30	--	--	20
$PM_{2.5}$	24-hr	2.6 (normal)	45.7	--	25.8	35	--
	Annual	0.26 (normal)	12.5	12.8	--	15.0	12

[1] 40 CFR 51.165 (b)(2).

Table 5.2-27 (above) shows that project impacts exceed the PSD significance level only for the federal NO_2 one-hour and $PM_{2.5}$ 24-hour standards. All other project impacts are too low to have the potential to cause or contribute significantly to a violation of an ambient air quality standard. No further analysis is necessary for those pollutants and averaging periods.

As shown in Table 5.2-28, the combined project plus background impacts are below the most stringent air quality standard for all pollutants and averaging periods except for 1-hour federal NO_2, 24-hour average state PM_{10}, annual average state PM_{10}, 24-hour average federal $PM_{2.5}$, and annual average state $PM_{2.5}$. Each of these are addressed below.

Federal 1-hour NO_2 standard and federal 24-hour average $PM_{2.5}$ standard - The federal one-hour NO_2 and 24-hour $PM_{2.5}$ standards are statistically based. Unlike most of the other standards, which are generally not to be exceeded, compliance with these two standards is determined by averaging, for three consecutive years, the 98th percentile value of the annual values. For a full set of data, the 98th percentile equals the 8th highest (out of 365) $PM_{2.5}$ 24-hour average, and the 8th highest (out of 365) NO_2 daily 1-hour maximum.

Details of the compliance demonstration for the federal one-hour NO_2 and 24-hour $PM_{2.5}$ standards are presented in Appendix G-7, and are summarized in Table 5.2-29. Table 5.2-29 shows that the project will comply with these statistically-based federal standards.

State 24-hour average PM_{10} standard, state annual average PM_{10} standard, and state 24-hour average $PM_{2.5}$ standard - Table 5.2.28 shows that worst-case background concentrations of PM_{10} and $PM_{2.5}$ are already above the state standards. However, in each case the project's modeled PM_{10} and $PM_{2.5}$ impacts are small relative to the existing background levels. In fact, for each of these three pollutants/averaging periods, the project's impacts are below the federal thresholds of significance, as shown above in Table 5.2-27. Consequently, the impacts for these three pollutants do not contribute significantly to the existing observed exceedances of these state

standards. Nevertheless, and as discussed in Section 5.2.7, the project's PM emissions will be fully mitigated.

TABLE 5.2-29
SUMMARY OF RESULTS OF DEMONSTRATION OF COMPLIANCE WITH FEDERAL 1-HOUR NO_2 AND 24-HOUR $PM_{2.5}$ STANDARDS

Standard	Maximum Predicted Impact (µg/m³)	Maximum Background Concentration (µg/m³)	3 year Average of 98th Percentile of Total Concentration (µg/m³)	NAAQS (µg/m³)
Federal 1-hour NO_2	100 (startup)	154	156	188
Federal 24-hour $PM_{2.5}$	2.6 (normal)	45.7	25.8	35

5.2.5 Cumulative Air Quality Impacts

Two types of cumulative air quality impact analyses are often conducted in association with power plant projects: a CEQA analysis and a PSD analysis.

A CEQA cumulative impacts analysis examines potential cumulative air quality impacts that may result from the project and other reasonably foreseeable projects. Such an analysis is generally required only when project impacts are significant. To ensure that potential cumulative impacts of the project and other nearby projects are adequately considered, a cumulative impacts analysis has been conducted in accordance with the protocol included as Appendix G-4. The analysis demonstrates that the project will not cause or contribute to any significant cumulative air quality impacts.

The second type of cumulative impact analysis is part of the PSD review process, and is designed to ensure that industrial facilities that have the potential to cause locally elevated concentrations of air contaminants are adequately considered when determining the project's potential to cause or contribute to a violation of a federal air quality standard. The PSD air quality impact analysis process, as administered by EPA Region 9, is now an iterative process, requiring a series of submittals and approvals. The first step in the process is the submittal, review, and approval of the modeling protocol. The modeling protocol was provided to EPA for review in November 2010. The next step in the process will be to identify the nearby sources that will be explicitly modeled for the compliance demonstration. The final submittal will be the compliance demonstration itself.

Because EPA's PSD process is now an iterative one, it will require supplemental submittals on a different schedule than the CEC/District permitting process.

5.2.5.1 Nearby Sources

CEQA Cumulative Analysis

The CEC requires an analysis to determine the cumulative impacts of the project and other projects within a six-mile radius that have received construction permits, but are not yet operational or that are in the permitting process or can be expected to be so in the near future. The District provided a list of such projects (see Appendix G-6). The District has indicated that

all of these projects will have emissions of less than 5 TPY of any pollutant. Based on consultation with the District, and consistent with past practice, none of these sources were evaluated by cumulative modeling analysis.

PSD Cumulative Analysis

As discussed above, EPA's PSD review process now requires multiple submittals and intermediate approvals. The first step, approval of the modeling protocol, has not yet been completed.

Following EPA guidance, the District has been consulted to prepare a list of existing facilities to be screened for inclusion in the PSD cumulative impact analysis. The initial list of candidate facilities (see Appendix G-6) is comprised of all facilities in San Diego County[7] with annual emissions of NO_2 or PM_{10} of more than 5 TPY. The facilities on this list will be individually screened to determine whether they are likely to cause a significant concentration gradient in the area impacted by the project. Any facilities that are likely to do so will be explicitly included in the PSD cumulative impact analysis.

5.2.5.2 Regional Impacts

Regional impacts are evaluated by assessing the project's contribution to regional emissions. Although the relative importance of VOC and NO_x emissions in ozone formation differs from region to region and from day to day, state law requires reductions in emissions of both precursors to reduce overall ozone levels. The change in the sum of emissions of these pollutants, equally weighted, provides a rough estimate of the impact of the project on regional ozone levels. Similarly, a comparison of the emissions of PM_{10} and $PM_{2.5}$ precursor emissions from the project with regional PM_{10} and $PM_{2.5}$ precursor emissions provides an estimate of the impact of the project on regional PM_{10} and $PM_{2.5}$ levels.

Table 5.2-30 summarizes these comparisons. The project's emissions are compared with regional emissions in 2010. San Diego Air Basin emissions projections for 2010 were taken from CARB's web-based emission inventory projection software.

TABLE 5.2-30
COMPARISON OF PROJECT EMISSIONS TO REGIONAL PRECURSOR EMISSIONS IN 2010: ANNUAL BASIS[1]

Ozone Precursors – Annual Basis	
Total San Diego Air Basin Ozone Precursors, tons/year	120,487
Total Project Ozone Precursor Emission, tons/year	91
Ratio of Project to Basin Ozone Precursor Emissions,	0.0008
PM10 Precursors – Annual Basis	
Total San Diego Air Basin PM_{10} Precursors, tons/year	165,418
Total Project PM_{10} Precursor Emissions, tons/year	132
Ratio of Project to Basin PM_{10} Precursor Emissions,	0.0008

[7]The modeling protocol indicates that only facilities within six miles would be considered. Because the District's database could not produce a list that was limited to such facilities, a much larger set of candidate sources was received and screened.

PM2.5 Precursors – Annual Basis	
Total San Diego Air Basin $PM_{2.5}$ Precursors, tons/year	136,693
Total Project $PM_{2.5}$ Precursor Emissions, tons/year	132
Ratio of Project to Basin $PM_{2.5}$ Precursor Emissions,	0.0010

[1] Basin-wide emissions calculated as 365 times daily emissions

5.2.5.3 Greenhouse Gas Cumulative Effects Analysis

In the absence of established thresholds of significance or methodologies for assessing impacts, this analysis of GHG emission impacts consists of quantifying project-related GHG emissions, determining their significance in comparison to the goals of AB 32, and discussing the potential impacts of climate change within the state as well as strategies for minimizing those impacts.

As the CEC's 2009 Integrated Energy Policy Report[8] noted:

> *The Energy Commission's 'Framework for Evaluating Greenhouse Gas Implications of Natural Gas-Fired Power Plants in California' found that as California's integrated electricity system evolves to meet GHG emissions reduction targets, the operational characteristics associated with increasing renewable generation will increase the need for flexible generation to maintain grid reliability. The report asserts that natural gas-fired power plants are generally well-suited for this role and that California cannot simply replace all natural gas fired power plants with renewable energy without endangering the safety and reliability of the electric system. The report acknowledges that California will need to modernize its natural gas generating fleet to reduce environmental impacts, however. Overall, the report found that the future of natural gas plants will likely fill five auxiliary roles: 1) intermittent generation support, 2) local capacity requirements, 3) grid operations support, 4) extreme load and system emergencies support, and 5) general energy support. The question remains as to the quantity, type, and location of natural gas-fired generation to fill remaining electricity needs once preferred resource targets are achieved*. (p. 110)

The California Public Utilities Commission ("CPUC") and CEC joint recommendations to CARB state that renewable integration will be a "cornerstone" of emission reductions. Similarly, CARB's AB 32 scoping plan anticipates the implementation of a 33% Renewable Portfolio Standard ("RPS") and includes the RPS as an emission reduction measure. The current RPS requires all load serving entities to procure 20% of their power from eligible renewable resources by 2010. In addition, Governor Schwarzenegger issued Executive Order S.14-08, which directed California State agencies to implement a 33% RPS by 2020. The California Air Resources Board is in the midst of a rulemaking activity establishing a 33% renewable electricity standard to be effective by 2020.

Most renewable energy facilities such as wind and solar are "intermittent resources," meaning these resources are not available to generate in all hours and thus have limited operating capacity. For example, intermittent resources can be limited by meteorological conditions on an hourly, daily, and seasonal basis. Further, most renewable resources have no ability to provide

[8] CEC-100-2009-003-CMF, December 5, 2007, accessed at http://www.energy.ca.gov/2009publications/CEC-100-2009-003/CEC-100-2009-003-CMF.PDF

regulation—the ability to ramp up and down quickly at the system operator's direction to ensure electric system reliability. In addition, the availability of intermittent resources is often unrelated to the load profile they serve. For example, some photovoltaic resources reach peak production around 12:00 noon, while the electrical demand sometimes peaks between 5:00 p.m. and 7:00 p.m.

PPEC can be operated without the limitations affecting intermittent renewable resources. PPEC will provide fast-starting, flexible generating resources that will allow SDG&E to firm intermittent renewable resources and thus integrate renewable resources into SDG&E's generation portfolio without affecting electric system reliability. PPEC will allow SDG&E to take advantage of renewable resources that are out on the market, but are volatile, from a system operations perspective, and require significant, flexible resources to firm their power for system reliability. Accordingly, as a fast-starting, flexible generating resource, PPEC will enhance the reliability of existing and future intermittent renewable resources and thus further SDG&E's RPS and GHG goals.

The PPEC will help provide "firming" sources for SDG&E's existing and future intermittent renewable resources in support of SDG&E's RPS and GHG goals. "Firming" involves the use of fast-starting, flexible generation that is always available under all operating conditions to ramp up or ramp down, as necessary, to balance load and generation. Firming power is the cornerstone of system reliability. Thus, in the context of CEQA, the CEC's Integrated Energy Policy Report, and other state GHG policy documents, the PPEC would not be expected to cause a significant cumulative impact with respect to GHGs. Instead, the PPEC supports the state's strategy to reduce fuel use and GHG emissions. Further, even though it is possible to quantify how many gross GHG emissions are attributable to a project, it is difficult to determine whether this will result in a net increase of these emissions, and, if so, by how much, due to the displacement, by PPEC, of emissions from less efficient generating resources. Therefore, it would be speculative to conclude that any given project results in a cumulatively significant adverse impact resulting from greenhouse gas emissions.

As directed by SB 97, the Resources Agency adopted Amendments to the CEQA Guidelines for greenhouse gas emissions (GHG CEQA Guidance) on December 30, 2009. On March 18, 2010, those amendments became effective.

The GHG CEQA Guidance included the following elements:

- Quantification of GHG emissions;
- Determination of whether the project may increase or decrease GHG emissions as compared to existing environmental setting;
- Determination of whether the project emissions exceed a threshold of significance determined by the lead agency;
- The extent to which the project complies with state, regional, or local plans for reduction or mitigation of GHGs; and

- Mitigation measures.

Certain GHG reduction strategies will require increases in natural gas consumption; for example, some fraction of electric generation from coal-fired power plants will need to be replaced by natural gas-fired generation. As the 2007 IEPR and a 2009 CEC Siting Committee Report[9] acknowledged, "new gas-fired power plants are more efficient than older power plants, and they displace these older facilities in the dispatch order." The CEC's 2009 Framework report[10] further discussed the role of new gas-fired power plants in displacing GHG emissions, and furthering the State's efforts to reduce GHG emissions. The 2009 Framework report concludes that as California expands renewable energy generation to achieve its GHG emissions reduction goals, it cannot simply retire natural-gas fired power plants: rather, new natural-gas fired power plants may be needed.

Net GHG emissions for the integrated electric system will decline when new gas-fired power plants are added that: (1) serve load growth or capacity needs more efficiently than the existing fleet; (2) improve the overall efficiency of the electric system; and/or (3) permit increased penetration of renewable generation.[11] Because of its location and operational characteristics, PPEC will contribute to the reduction of GHG emissions because it will achieve all of these goals.

As a fast-starting, highly efficient simple-cycle facility, PPEC will meet all three of these criteria. The proposed project would have a net heat rate of approximately 8,694 Btu/kWh (HHV), which leads to an estimated GHG emission rate of 0.477 MT CO2/MWh. This GHG emission rate is quite low for a simple-cycle facility, and compares favorably with the GHG performance of the recently permitted Tracy Combined Cycle project (0.474 MT CO2/MWh) and the TID Almond 2 Power Plant project (0.510 MT CO2/MWh). With its low heat rate, PPEC will displace older, less-efficient peaking units in the SDG&E service territory. PPEC will also support the integration of renewable energy. The proposed simple-cycle LMS100 gas turbines will provide quick starting and fast ramping power that would be much more likely to foster integration of renewable energy than comparable non-renewable base load or intermediate energy resources.

Finally, PPEC will provide more than 1,300 GWh of natural gas-fired generation that could replace aging, less-efficient, coal-fired and/or once-through cooled generating resources.

In the Presiding Member's Proposed Decision for the Avenal Energy Project (CEC-800-2009-006-PMPD), the Committee has established a three-part test to ensure that new natural gas-fired power plants approved by the CEC will support the goals and policies of AB 32 and the related parts of California's GHG framework. The elements of this test are listed below:

(1) The project must not increase the overall system heat rate for natural gas plants;

[9] CEC-700-2009-004, "Committee Guidance on Fulfilling California Environmental Quality Act Responsibilities for Greenhouse Gas Impacts In Power Plant Siting Applications," March 2009.
[10] CEC-700-2009-009, "Framework for Evaluating Greenhouse Gas Implications of Natural Gas-Fired Power Plants in California," May 2009.
[11] Ibid.

(2) The project must not interfere with generation from existing renewable facilities nor with the integration of new renewable generation; and

(3) Taking into account the factors listed in (1) and (2), the project must reduce system-wide GHG emissions and support the goals and policies of AB 32.

Based on the preceding discussion, the PPEC meets these requirements.

5.2.6 Consistency with Laws, Ordinances, Regulations, and Standards

This section considers consistency separately for federal, state, and local requirements.

5.2.6.1 Consistency with Federal Requirements

Prevention of Significant Deterioration Program

The PSD requirements apply, on a pollutant-specific basis, to any project that is a new major stationary source or a major modification to an existing major stationary source. A major source is a listed facility (one of 28 PSD source categories listed in the federal Clean Air Act) that emits at least 100 TPY, or any other facility that emits at least 250 TPY. Effective July 1, 2011, PSD will also apply to a new stationary source that emits more than 100,000 TPY of greenhouse gases (GHGs). Because the GHG emissions for the proposed project are above the PSD major source threshold of 100,000 TPY, the proposed project is subject to PSD review. Table 5.2-31 shows the pollutants that will trigger PSD review.

TABLE 5.2-31
PSD SIGNIFICANT EMISSION THRESHOLDS

Pollutant	PSD Significant Emission Threshold (TPY)[1]	Project Emissions (TPY)	Significant? (Y/N)
SO_2	40	4.1	N
PM_{10}	15	37.2	Y
$PM_{2.5}$	10	37.2	Y
NO_2	40	70.4	Y
CO	100	96.4	N
GHGs	75,000	685,000	Y
Lead	0.6	0.0	N

[1] 40 CFR 51.165 (a)(1)(xxvii)

PSD permits for major sources in the SDAPCD are issued by EPA Region 9. Because the proposed project is subject to PSD review, the applicant will need to seek a separate permit from EPA.

The permit application that will be submitted to the EPA for the proposed project will address the PSD requirements for the subject pollutants, as outlined below.

- Emissions of the PSD pollutants that trigger PSD review (NO_x, $PM_{10}/PM_{2.5}$ and GHGs) will be controlled using BACT.

- Air quality impacts in combination with other increment-consuming sources must not exceed maximum allowable incremental increases for $PM_{2.5}$, PM_{10}, and NO_2.
- Air quality impacts of all sources in the area plus ambient pollutant background levels cannot exceed NAAQS.
- Pre- and/or post-construction air quality monitoring may be required.
- The air quality impacts on soils, vegetation, and nearby PSD Class I areas (specific national parks and wilderness areas) must be evaluated. (Note: The PPEC is located in a Class II area.)

Nonattainment New Source Review

Nonattainment New Source Review jurisdiction has been delegated to the SDAPCD for all pollutants and is discussed further under local requirement conformance section below.

National Standards of Performance for New Stationary Sources

Establishes national standards of performance to limit the emissions of criteria pollutants (air pollutants for which EPA has established (NAAQS) from new or reconstructed facilities in specific source categories. Applicability of these regulations depends on equipment size, process rate, and date of construction. The proposed project will be subject to Subpart KKKK, Standards of Performance for Stationary Gas Turbines (constructed after February 18, 2005). This new source performance standard applies to gas turbines with a heat input in excess of 1 MMBtu/hr that commence construction after February 18, 2005, and is therefore applicable to the proposed project's gas turbines. Subpart KKKK limits NO_x and SO_2 emissions from new gas turbines based on power output. The limits for gas turbines greater than 30MW are 0.39 lb NO_x per MW-hr and 0.58 lb SO_2 per MW-hr. The emission limits of 2.5 ppmc NO_x (equivalent to approximately 0.077 lbs NOx/MW-hr) and 1.9 lbs/hr SO_2 (equivalent to approximately 0.019 lbs SOx/MW-hr) proposed for this project are well below the Subpart KKKK limits, as shown in Table 5.2-32.

TABLE 5.2-32
COMPLIANCE WITH 40 CFR 60 SUBPART KKKK

	Proposed Permit Limits			Subpart KKKK Limit, lb/MW-hr
Pollutant	ppmc	lb/hr	lb/MW-hr (max)	
SO_2	0.42	1.9	0.019	0.58
NO_2	2.5	8.2	0.077	0.39

Compliance with the NSPS limits must be demonstrated through an initial performance test. Because the proposed project's gas turbines will be equipped with a continuous NO_x emissions monitor, ongoing annual performance testing will not be required under the NSPS.

These standards are enforced at the local level with federal and state oversight.

National Emission Standards for Hazardous Air Pollutants

Establishes national emission standards to limit emissions of hazardous air pollutants (HAPs, or air pollutants identified by EPA as causing or contributing to the adverse health effects of air pollution but for which NAAQS have not been established) from facilities in specific source categories. These standards are implemented at the local level with federal oversight. Only the NESHAP for combustion turbines, which limits formaldehyde emissions from turbines, is potentially applicable to the proposed project. However, as shown in Table 5.2-22, the HAPs emissions for the proposed project are below the NESHAP major source thresholds of 10 TPY of any single HAP or 25 TPY of all HAPS. Therefore, this NESHAP is not applicable to the proposed project and NESHAP requirements will not be addressed further.

Acid Rain Program

Requires the monitoring and reporting of emissions of acidic compounds and their precursors from combustion equipment owned by a utility. The principal source of these compounds is the combustion of fossil fuels. Therefore, Title IV established national standards to monitor, record, and, in some cases, limit SO_2 and NO_x emissions from electrical power generating facilities. These standards are implemented at the local level with federal oversight. SDAPCD has received delegation authority to implement Title IV. PPEC will comply with the acid rain program requirements and will file an acid rain permit application in accordance with the deadlines in SDAPCD Regulation 14.

Title V Operating Permits Program

Requires the issuance of operating permits that identify all applicable federal performance, operating, monitoring, recordkeeping, and reporting requirements. Title V applies to major facilities, Phase II acid rain facilities, subject solid waste incinerator facilities, and any facility listed by EPA as requiring a Title V permit. SDAPCD has received delegation authority for this program. PPEC will comply with the requirements of Title V by filing a Title V permit application in accordance with the deadlines in SDAPCD Regulation 14.

5.2.6.2 Consistency with State Requirements

As discussed in Section 5.2.3.2, state law set up local air pollution control districts and air quality management districts with the principal responsibility for regulating emissions from stationary sources. The proposed project is under the local jurisdiction of the SDAPCD; therefore, compliance with SDAPCD regulations will assure compliance with state air quality requirements.

The PPEC CO_2 emission rate of 0.477 MT/MWh would meet the Emission Performance Standard of 0.51 MT/MWh. However, as a simple-cycle power plant, PPEC is not designed or intended for base load generation. The EPS only applies to procurements which entail an annualized capacity factor in excess of 60%. With an expected operating limit on PPEC that is the equivalent of 4000 full-load hours per year, PPEC's annualized capacity factor will be less than 50%. Therefore, the SB 1368 limitation does not apply to this facility.

5.2.6.3 Consistency with Local Requirements

The SDAPCD has been delegated responsibility for implementing local, state, and federal air quality regulations in the San Diego Air Basin. The proposed project is subject to District regulations that apply to new stationary sources, to the prohibitory regulations that specify emission standards for individual equipment categories, and to the requirements for evaluation of impacts from non-criteria pollutants. The following sections include the evaluation of facility compliance with applicable District requirements.

New Source Review Requirements

The SDAPCD's New Source Review (NSR) rule (Regulation II, Rule 20.3 NSR – Major Stationary Sources & PSD Stationary Sources) establishes the criteria for siting new and modified emission sources; this rule is applicable to the proposed project. There are three basic requirements within the NSR rules. First, BACT and Lowest Achievable Emission Rate (LAER) requirements must be applied to any new emission unit with potential emissions above specified threshold quantities. Second, all potential emission increases of nonattainment pollutants or precursors from the proposed source above specified thresholds must be offset by real, quantifiable, surplus, permanent, and enforceable emission decreases in the form of ERCs. Third, an ambient air quality impact analysis must be conducted to confirm that the project does not cause or contribute to a violation of a national or California AAQS or jeopardize public health.

BACT

A comparison of potential emissions with the BACT thresholds in SDAPCD Rule 20.3 is presented in Table 5.2-33. This table shows that the proposed gas turbines are required to use best available control technology (BACT) for NO_x, VOC, SO_2 and PM_{10}. Emissions from the proposed cooling tower are below the BACT threshold in the District's NSR rule; however, under federal PSD rules BACT must be evaluated for emissions from the cooling tower.

TABLE 5.2-33
APPLICABILITY OF BACT REQUIREMENTS UNDER NSR

Pollutant	BACT Threshold, lb/day	Unit Emissions, lb/day	BACT Required?
Gas Turbines, *each*			
NOx	10	288.1	yes
VOC	10	85.9	yes
SO_2	10	45.6	yes
PM_{10}	10	132.0	yes
Cooling Tower			
PM_{10}	10	9.4	no

A detailed BACT analysis was conducted to evaluate available control options for the proposed gas turbines under both PSD and NSR requirements; the analysis is presented in Appendix G-5. A summary of the proposed BACT is provided in Table 5.2-34.

TABLE 5.2-34
SUMMARY OF PROPOSED BACT

Pollutant	Control Technology	Concentration
NOx	Water injection and SCR and non-use of carbon control and capture system (CCS)	2.5 ppmvd @ 15% O_2 (1-hr avg)
CO	Catalytic Oxidation	4.0 ppmvd @ 15% O_2 (1-hr avg)
VOC	Good combustion practices	2.0 ppmvd @ 15% O_2 (1-hr avg)
SO_2	Pipeline Natural Gas	NA
$PM_{10}/PM_{2.5}$, gas turbines	Pipeline Natural Gas	NA
$PM_{10}/PM_{2.5}$, cooling tower	High-efficiency drift eliminator	NA
GHGs	Efficient simple-cycle gas turbine	NA

Offsets

SDAPCD Rule 20.1 requires that projects with operational emissions above 50 tons per year (TPY) of NO_x or VOC, 100 TPY of PM_{10} or SO_x, provide emission offsets by emission reductions from other sources. Based on emissions data presented in Section 5.2.4.4, Operational Emissions, annual emissions of NO_x from PPEC would exceed the District's offset trigger of 50 TPY. According to Rule 20.3, NO_x offsets need to be provided at a ratio of 1.2:1.

The actual mix of emission reduction credits (ERCs) and/or emission reduction projects that will be used to offset proposed project emissions will be determined based on availability and market conditions. The primary option is to purchase ERCs. SDAPCD regulations allow the use of interpollutant offsets in situations where one pollutant is a precursor to another or when two

pollutants are both precursors to another nonattainment pollutant. For example, because NOx and VOC both contribute to the formation of ozone, VOC ERCs could be used to offset some of the proposed project's NO_x emissions. PPEC will purchase ERCs sufficient to comply with SDAPCD requirements. Offset and mitigation requirements for the project are summarized in Table 5.2-35 below.

PPEC will submit its offset plan as a separate confidential filing.

Air Quality Impact Analysis

Under the SDACPD new source review regulations, an air quality impact analysis must be performed to confirm that the emission increases for a project will not interfere with the attainment or maintenance of an applicable ambient air quality standard or cause additional violations of a standard anywhere the standard is already exceeded. The modeling results presented in Section 5.2.4.16 show that the proposed project will not interfere with the attainment or maintenance of the applicable air quality standards or cause additional violations of any standards.

New Source Review Requirements for Air Toxics

The SDAPCD's New Source Review (NSR) rule for air toxics (Regulation XII, Rule 1200 (Toxic Air Contaminants - New Source Review) describes the requirements, procedures, and standards for evaluating the potential impact of toxic air contaminants (TAC) from new sources and modifications to existing sources. The rule also requires a demonstration that the source will not exceed the applicable health risk thresholds. PPEC will comply with the requirements of this rule. An air toxics health risk assessment consistent with SDAPCD requirements under Rule 1200 is provided in Section 5.16 of this AFC, Public Health and Safety.

New Source Performance Standards

The SDAPCD's New Source Performance Standards (Regulation X, Standards of Performance for New Stationary Sources) incorporates the federal NSPS from 40 CFR Part 60. The applicability and requirements of and compliance with the New Source Performance Standards are discussed above under the federal regulations section.

Federal Programs and Permits

The federal Title IV acid rain program requirement and Title V operational permit requirements are in SDAPCD's Rule 1412 (Federal Acid Rain Program Requirements) and Regulation XIV Rule 1401/1410. The applicability and requirements of and compliance with these programs and permits are discussed above under the federal regulations section.

Public Notification

Because the proposed PPEC project emissions will exceed the AQIA trigger levels, public notice under Rule 20.3 is required and the project expects the SDAPCD Air Pollution Control Officer will provide this notice in a timely manner.

Permit Fees

The SDAPCD requirements regarding permit fees are specified in Regulation III. This regulation establishes the filing and permit review fees for specific types of new sources, as well as annual renewal fees and penalty fees for existing sources. PPEC will pay the applicable fees in accordance with these requirements.

Prohibitions

The SDAPCD prohibitions for specific types of sources and pollutants are addressed in Regulation IV. The prohibition rules that apply to the proposed PPEC project are listed below.

- Rule 50 – Visible Emissions: This rule prohibits any source from discharging any emissions of any air contaminant that is darker in shade than that designated as Number 1 on the Ringelmann Chart for a period or periods aggregating more than three minutes in any period of 60 consecutive minutes. The PPEC project use of natural gas would eliminate the possibility of a dark visible emissions. Therefore, the PPEC project is expected to comply with this requirement.

- Rule 51 – Nuisance: This rule prohibits the discharge from a facility of air contaminants that cause injury, detriment, nuisance, or annoyance to the public, or cause damage to business or property. The PPEC project would not emit odorous pollutants, and the screening level health risk assessment included in the Public Health Section demonstrates that the potential health risk from the emissions are less than significant.

- Rule 52 – Particulate Matter Emission Standards: This rule prohibits the discharge from any source of particulate matter in excess of 0.10 grain per dry standard cubic foot (0.23 grams per dry standard cubic meter) of gas. The proposed PPEC project will have particulate matter emissions less than 0.23 grams per dry standard cubic meter and will thus comply with this rule.

- Rule 62 – Sulfur Content of Fuels: This rule prohibits any stationary source from using any gaseous fuel containing more than ten grains of sulfur compounds per 100 cubic feet of dry gaseous fuel. The proposed PPEC project will have a range of 0.25 (long term) to 0.75 (short term) grains per 100 cubic feet of dry gaseous fuel, both of which are much less than the limit under this rule.

5.2.7 Mitigation Measures

Mitigation will be provided for project emissions in the form of offsets, as required by SDAPCD (District) regulations and the installation of BACT, also required under SDAPCD regulations. The cumulative air quality impacts analysis described in Section 5.2.5 shows that the project will not result in significant cumulative impacts.

As discussed in Section 5.2.6.3, SDAPCD Rule 20.1 requires that projects with operational emissions above 50 tons per year (TPY) of NO_x or VOC, or 100 TPY of PM_{10} or SO_x provide emission offsets through emission reductions from other sources. Annual emissions of NO_x from PPEC would exceed the District's offset trigger level of 50 TPY. According to Rule 20.3, NO_x offsets need to be provided at a ratio of 1.2:1.

In addition to the District's offset requirements, it is the CEC's policy to require mitigation for the full amounts of all nonattainment pollutants and their precursors at a ratio of at least 1:1. Accordingly, the Applicant will mitigate the full project emissions of NO_x, VOC, PM_{10}, $PM_{2.5}$ and SO_2. Mitigation for CO will not be required because of the current attainment designation of the San Diego air basin for this pollutant.

Table 5.2-35 summarizes the project's emissions, District offset and CEC mitigation requirements, and District ERC Registry-based availability.

TABLE 5.2-35
PPEC OFFSET AND MITIGATION REQUIREMENTS AND ERC AVAILABILITY

Pollutant	Project Emissions (TPY)	District Offset Requirements (TPY)	CEC Mitigation Requirements (TPY)	Available ERCs, District Registry (TPY)
NO_x	70.4	84.5	70.4	178
CO	96.4	--	--	--
VOC	20.7	--	20.7	373
SO_2	4.1	--	4.1	17
PM_{10}	37.2	--	37.2	157
GHGs	203,000 MT	--	Cap & Trade Allowances	--

The details of the offset/mitigation package have not yet been finalized, and disclosure of the preferred mitigation package at this time would compromise ongoing negotiations. The project's offset/mitigation strategy is being provided as a separate, confidential filing. The Applicant will submit additional confidential filings to the CEC as it enters into contracts for specific ERCs.

Table 5.2-35 shows that there are sufficient offsets available in the District's ERC registry to address project requirements.

As discussed above, the project's GHG impacts are not significant under CEQA. GHG regulatory offset requirements will be addressed through acquisition of allowances under CARB's Cap-and-Trade program.

5.2.8 Permits Required and Permit Schedule

Under Regulation II of its Rules and Regulations, SDAPCD regulates the construction, alteration, replacement, and operation of new stationary emissions sources and modifications to existing sources. In addition, pursuant to its Rule 20.5 Power Plants, the District's Air Pollution Control Officer will conduct a Determination of Compliance (DOC) review upon receipt of the AFC for the proposed PPEC project. This DOC for the project will be provided by SDAPCD as part of the CEC review to confirm that the project will meet all of the District's rules and regulations. A preliminary DOC (PDOC) is expected within approximately 180 days after acceptance of the application is complete. The PDOC will be circulated for public comment, and a final DOC (FDOC) will be issued by the SDAPCD after comment has been considered and addressed. Upon receiving CEC's final license, the SDAPCD will be responsible for issuing an Authority to Construct (ATC) permit and Permit to Operate (PTO) for PPEC. This permitting process allows the SDAPCD to adequately review new and modified air pollution sources to

ensure compliance with all applicable prohibitory rules and to ensure that appropriate emission controls will be used. An ATC allows for the construction of the air pollution source and remains in effect until the PTO application is granted, denied, or canceled. Once the project has completed construction and commences operations, SDAPCD will require verification that PPEC conforms to the ATC application and, following such verification, will issue a PTO. The PTO specifies conditions that the air pollution source must meet to comply with all air quality standards and regulations.

The SDAPCD has also received delegation from EPA to administer the federal Title IV and Title V programs for sources in San Diego County. The proposed PPEC project will be exempt from many of the acid rain program requirements, but PPEC will be required to estimate SO_2 and CO2 emissions from the project and to monitor NOx emissions with a certified CEMS. The proposed PPEC must also submit a Title V permit application within 12 months after commencement of plant operations pursuant to SDAPCD Rule 1414.

EPA has not delegated authority to the SDAPCD to issue PSD permits. A PSD permit application will be submitted to EPA shortly after the AFC has been submitted. EPA will take an unknown amount of time to determine whether the application is complete. EPA has recently revised the PSD permit application process, building in iterations so that it can evaluate and approve one set of information before allowing the applicant to proceed to the next step. It is unlikely that EPA will determine that an application is complete until the end of the iterative process. Once the PSD application is determined to be complete, EPA regulations require a decision on the permit within one year. EPA will circulate a draft permit for public comment prior to finalizing its decision. Construction cannot begin until the PSD permit has been issued.

5.2.9 References

Auer, Jr., A.H. 1978. "Correlation of Land Use and Cover with Meteorological Anomalies." Journal of Applied Meteorology. 17: 636-643.

California Air Resources Board (CARB). 2007. Off-Road Mobile Source Emission Factors, Off-Road Emissions Inventory Program.

California Air Resources Board (CARB). 2010. ADAM Website (www.arb.ca.gov/adam/welcome.html). November.

California Energy Commission (CEC). 1997. "Regulations Pertaining to the Rules of Practice and Procedure and Plant Site Certification." Title 20, California Code of Regulations. Chapters 1, 2, and 5.

California Energy Commission (CEC). 2006. Rules of Practice and Procedure and Power Plant Site Certification Regulations Revisions, 04-SIT-2, December 14, 2006.

California Energy Commission (2007). 2007 Integrated Energy Policy Report – Scenario Analysis of California's Electricity System. http://www.energy.ca.gov/2007_energypolicy/documents/index.html.

California Energy Commission. Committee Report (08-GHG OII-01). Committee Guidance On Fulfilling California Environmental Quality Act Responsibilities For Greenhouse Gas Impacts In Power Plant Siting Applications. March 2009. http://www.energy.ca.gov/ghg_powerplants/documents/index.html.

California Energy Commission (2009). Framework for Evaluating Greenhouse Gas Implications of Natural Gas-Fired Power Plants in California, CEC-700- 2009-009-F, Prepared by: MRW and Associates. December 2009.

California Energy Commission (2009). Final Commission Decision for the Avenal Energy Plant (CEC-800-2009-006-CMF), December 2009.

San Joaquin Valley Air Pollution Control District. April 2010. Modeling Procedure to Address the New Federal 1 Hour NO_2 Standard.

Sierra Research. 2010 Modeling Protocol for the Pio Pico Energy Center, San Diego County, California. Prepared by URS Corporation for submittal to the San Diego Air Pollution Control District and the California Energy Commission. November.

South Coast Air Quality Management District. 1993. CEQA Air Quality Handbook. April 1993.

U.S. Environmental Protection Agency (EPA). 1985. Guideline for Determination of Good Engineering Stack Height (Technical Support Document for the Stack Height Regulation) (Revised), EPA-450/4-80-023R. Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina. June 1985.

U.S. Environmental Protection Agency (EPA). 1992a. Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised. EPA-454/R-92-019. October 1992.

U.S. Environmental Protection Agency (EPA). 1995a. Building Profile Input Program-Prime. Version 98086.

U.S. Environmental Protection Agency (EPA). 1995b. Screen3 Model User's Guide. EPA-454/B-95-004. September 1995.

U.S. Environmental Protection Agency (EPA). 1995c. User's Guide to the Building Profile Input Program (Revised), EPA-454/R-93-038, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina. February.

U.S. Environmental Protection Agency (EPA). 2000. Meteorological Monitoring Guidance for Regulatory Modeling Applications. February 2000.

U.S. Environmental Protection Agency (EPA). 2003. Guideline on Air Quality Models. 40 CFR51 Appendix W. July 1, 2003 Edition.

U.S. Environmental Protection Agency (EPA). 2004. User's Guide for the AMS/EPA Regulatory Model-AERMOD. (EPA-454/B-03-001). September 2004.

U.S. Environmental Protection Agency (EPA). 2005. AERMOD Implementation Guide. September 2005.

U.S. Environmental Protection Agency (EPA). 2006a. Addendum to User's Guide for the AMS/EPA Regulatory Model-AERMOD. December 2006.

U.S. Environmental Protection Agency (EPA). 2006b. EPA AirData.

U.S. Environmental Protection Agency (EPA). 2008a. AERMOD Implementation Guide. January 2008.

U.S. Environmental Protection Agency (EPA). 2008b. AERSURFACE User's Guide. January 2008.

U.S. Environmental Protection Agency (EPA). 2010a. Notice Regarding Modeling for New Hourly NO_2 NAAQS. February.

U.S. Environmental Protection Agency (EPA). 2010b. EPA AIRS Website (www.epa.gov/air/data/index.htm). November.

Western Regional Climate Center. 2007. Desert Research Institute, Las Vegas, NV (http://www.wrcc.dri.edu).

Adequacy Issue: Adequate ____ Inadequate ____

DATA ADEQUACY WORKSHEET

Revision No. 0 Date ____

Technical Area: **Air Quality** Project: Pio Pico Energy Center Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (1)	...provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the project, the measures proposed to mitigate adverse environmental impacts of the project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation.	See Below		
Appendix B (g) (8) (A)	The information necessary for the air pollution control district where the project is located to complete a Determination of Compliance.	See Below		
Appendix B (g) (8) (B)	The heating value and chemical characteristics of the proposed fuels, the stack height and diameter, the exhaust velocity and temperature, the heat rate and the expected capacity factor of the proposed facility.	Heating value and chemical characteristics of fuel: Section 5.2.4.2, Table 5.2-16. Stack Height, diameter, exhaust velocity, and temperature: Appendix G-4, Tables G-4.1, G-4.2, G-4.3 and Appendix G-7, Table G-7.1. Heat rate and capacity factor: Section 3.5.4.2, Table 3.5-2.		
Appendix B (g) (8) (C)	A description of the control technologies proposed to limit the emission of criteria pollutants.	Sections 5.2.4.4 and 5.2.6.3, Table 5.2-34.		
Appendix B (g) (8) (D)	A description of the cooling system, the estimated cooling tower drift rate, the rate of water flow through the cooling tower, and the maximum concentrations of total dissolved solids.	Sections 3.5.7.1 and 5.2.4.2 and Appendix G-3, Table G-3.2.		

Adequacy Issue: Adequate ____ Inadequate ____

DATA ADEQUACY WORKSHEET

Revision No. 0 Date ____

Technical Area: **Air Quality** Project: Pio Pico Energy Center Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (8) (E)	The emission rates of criteria pollutants and greenhouse gases (CO2, CH4, N2O, and SF6) from the stack, cooling towers, fuels and materials handling processes, delivery and storage systems, and from all on-site secondary emission sources.	Section 5.2.4.3, Table 5.2-17; Section 5.2.4.4, Tables 5.2-17 to 5.2-21; Section 5.2.4.6, Table 5.2-24.		
Appendix B (g) (8) (F)(i)	A description of typical operational modes, and start-up and shutdown modes for the proposed project, including the estimated frequency of occurrence and duration of each mode, and estimated emission rate for each criteria pollutant during each mode.	Section 5.4.4.4, Tables 5.2-19 to 5.2-21.		
Appendix B (g) (8) (F)(ii)	A description of the project's planned initial commissioning phase, which is the phase between the first firing of emissions sources and the commercial operations date, including the types and durations of equipment tests, criteria pollutant emissions, and monitoring techniques to be used during such tests.	Section 5.4.4.3, Table 5.2-17.		
Appendix B (g) (8) (G)	The ambient concentrations of all criteria pollutants for the previous three years as measured at the three Air Resources Board certified monitoring stations located closest to the project site, and an analysis of whether this data is representative of conditions at the project site. The applicant may substitute an explanation as to why information from one, two, or all stations is either not available or unnecessary.	Sections 5.2.1.4 and 5.2.4.12		

Adequacy Issue: Adequate ____ Inadequate ____

DATA ADEQUACY WORKSHEET

Revision No. 0 Date ____

Technical Area: **Air Quality** Project: Pio Pico Energy Center Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (8) (H)	One year of meteorological data collected from either the Federal Aviation Administration Class 1 station nearest to the project or from the project site, or meteorological data approved by the California Air Resources Board or the local air pollution control district.	Section 5.2.4.11		
Appendix B (g) (8) (H) (i)	If the data is collected from the project site, the applicant shall demonstrate compliance with the requirements of the U.S. Environmental Protection Agency document entitled "On-Site Meteorological Program Guidance for Regulatory Modeling Applications" (EPA - 450/4-87-013 (August 1995)), which is incorporated by reference in its entirety.	N/A – Data not collected onsite.		
Appendix B (g) (8) (H) (ii)	The data shall include quarterly wind tables and wind roses, ambient temperatures, relative humidity, stability and mixing heights, upper atmospheric air data, and an analysis of whether this data is representative of conditions at the project site.	Sections 5.2.1.2 and 5.2.4.11, Appendix G.1, CD containing modeling files.		
Appendix B (g) (8) (I)	An evaluation of the project's direct and cumulative air quality impacts, consisting of the following:	See Below		

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (8) (I) (i)	A screening level air quality modeling analysis, or a more detailed modeling analysis if so desired by the applicant, of the direct criteria pollutant impacts of project construction activities on ambient air quality conditions, including fugitive dust (PM_{10}) emissions from grading, excavation and site disturbance, as well as the combustion emissions [nitrogen oxides (NO_x), sulfur dioxide (SO_2), carbon monoxide (CO), and particulate matter less than 10 microns in diameter (PM_{10}) and particulate matter less than 2.5 microns in diameter (PM2.5)] from construction-related equipment;	Section 5.2.4.13, Table 5.2-25.		
Appendix B (g) (8) (I) (ii)	A screening level air quality modeling analysis, or a more detailed modeling analysis if so desired by the applicant, of the direct criteria pollutant (NO_x, SO_2, CO, $PM_{10,}$ and $PM_{2.5}$) impacts on ambient air quality conditions of the project during typical (normal) operation, and during shutdown and startup modes of operation. Identify and include in the modeling of each operating mode the estimated maximum emissions rates and the assumed meteorological conditions;	Section 5.2.4.15, Tables 5.2-27 to 5.2-29.		
Appendix B (g) (8) (I) (iii)	A protocol for a cumulative air quality modeling impacts analysis of the project's typical operating mode in combination with other stationary emissions sources within a six mile radius which have received construction permits but are not yet operational, or are in the permitting process. The cumulative inert pollutant impact analysis should assess whether estimated emissions concentrations will cause or contribute to a violation of any ambient air quality standard; and	Section 5.2.5.1		

Adequacy Issue: Adequate ____ Inadequate ____

DATA ADEQUACY WORKSHEET

Revision No. 0 Date ____

Technical Area: **Air Quality** Project: Pio Pico Energy Center Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (8) (I) (iv)	An air dispersion modeling analysis of the impacts of the initial commissioning phase emissions on state and federal ambient air quality standards for NO_X, SO_2, CO, PM_{10}, and $PM_{2.5}$.	Section 5.2.4.14, Table 5.2-26.		
Appendix B (g) (8) (J)	If an emission offset strategy is proposed to mitigate the project's impacts under subsection (g)(1), provide the following information:	See Below		
Appendix B (g) (8) (J) (i)	The quantity of offsets or emission reductions that are needed to satisfy air permitting requirements of local permitting agencies (such as the air district), state and federal oversight air agencies, and the California Energy Commission. Identify by criteria air pollutant, and if appropriate, greenhouse gas; and	For criteria pollutants: Sections 5.2.6.3 (offset subsection) and 5.2.7. For GHGs: Section 5.2.7.		
Appendix B (g) (8) (J) (ii)	Potential offset sources, including location, and quantity of emission reductions;	Confidential Filing		
Appendix B (g) (8) (K)	A detailed description of the mitigation, if any, which an applicant may propose, for all projects impacts from criteria pollutants that currently exceed state or federal ambient air quality standards, but are not subject to offset requirements under the district's new source review rule.	Section 5.2.7		
Appendix B (i) (1) (A)	Tables which identify laws, regulations, ordinances, standards, adopted local, regional, state, and federal land use plans, leases, and permits applicable to the proposed project, and a discussion of the applicability of, and conformance with each. The table or matrix shall explicitly reference pages in the application wherein conformance, with each law or standard during both construction and operation of the facility is discussed; and	Section 5.2.3, Table 5.2-12.		

Adequacy Issue: Adequate ____ Inadequate ____

DATA ADEQUACY WORKSHEET

Revision No. 0 Date ____

Technical Area: **Air Quality** Project: Pio Pico Energy Center Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (i) (1) (B)	Tables which identify each agency with jurisdiction to issue applicable permits, leases, and approvals or to enforce identified laws, regulations, standards, and adopted local, regional, state and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the commission to certify sites and related facilities.	Sections 5.2.2 and 5.2.3.		
Appendix B (i) (2)	The name, title, phone number, address (required), and email address (if known), of an official who was contacted within each agency, and also provide the name of the official who will serve as a contact person for Commission staff.	Section 5.2.2, Table 5.2-9.		
Appendix B (i) (3)	A schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.	Section 5.2.8		