



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

**Draft**

## **ENVIRONMENTAL IMPACT REPORT**

ALTERNATIVE COMPLIANCE PLAN TO USE  
INTERCHANGEABLE EMISSION REDUCTION CREDITS TO  
COMPLY WITH THE NO<sub>x</sub> EMISSION LIMITS OF BAAQMD  
RULE 9-11

PACIFIC GAS & ELECTRIC COMPANY  
SAN FRANCISCO, CALIFORNIA

HUNTERS POINT POWER PLANT

August 2003

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# CHAPTER 1

## *INTRODUCTION*

### **1.1 SUMMARY OF PROJECT**

This Environmental Impact Report (EIR) is an informational document intended to disclose to decision-makers and to the public the environmental consequences of the implementation of an Alternative Compliance Plan (ACP) proposed by Pacific Gas & Electric Company (PG&E) for its Hunters Point Power Plant facility located in San Francisco, California (HPPP facility).

PG&E proposes to use an ACP to comply with a limit on emissions of nitrogen oxides (NO<sub>x</sub>) in Bay Area Air Quality Management District (BAAQMD or the District) Regulation 9, Rule 11 (Rule 9-11) starting in 2004. Rule 9-11 limits NO<sub>x</sub> and carbon monoxide (CO) emissions from certain electric power generating steam boilers. The 2004 systemwide NO<sub>x</sub> emissions limit will be 0.037 pounds NO<sub>x</sub> per million BTU (lb/MMBTU), calculated on an hourly basis. Starting in 2005, the systemwide NO<sub>x</sub> emissions limit will be 0.018 lb/MMBTU. Under PG&E's proposed ACP (BAAQMD Application No. 6811), PG&E will comply with Rule 9-11 by using interchangeable emission reduction credits (IERCs) generated pursuant to BAAQMD Regulation 2, Rule 9 (Rule 2-9) by over-controlling NO<sub>x</sub> emissions from its boilers at the HPPP facility.

To determine the scope of this EIR, BAAQMD has prepared an Initial Study to assess what effects on the environment PG&E's use of the proposed ACP has the potential to cause. (See Appendix F.) The Initial Study concluded that the project would have either no impact or a less than significant impact on all environmental factors. Therefore, an EIR is not required under the California Environmental Quality Act (CEQA). Nevertheless, BAAQMD has prepared this EIR at PG&E's request, pursuant to an agreement (the Settlement Agreement) between PG&E and certain third parties concerning the IERCs and the ACP.

### **1.2 ORGANIZATION AND SUMMARY OF THIS EIR**

This document is organized into the following chapters:

- Chapter 1 - Introduction: Summarizes this EIR.
- Chapter 2 - Project Description: Provides a detailed description of PG&E's ACP, PG&E's generation of IERCs, certain third parties' appeal of the IERCs, and the Settlement Agreement that resolved the appeal.
- Chapter 3 - Environmental Analysis: Contains an analysis of the proposed ACP's impacts on air quality, including (i) a description of the environmental setting, (ii) the standards for determining whether the ACP will have a significant impact on the environment, and (iii) an assessment of the environmental impacts of the proposed

project. This chapter concludes that PG&E's ACP will not have a significant impact on air quality and therefore no mitigation measures are required. Since there are no significant impacts from PG&E's ACP, the District is not required to consider alternatives. Nevertheless, the District considers two alternatives to the project.

### **1.3 USE OF THIS DOCUMENT BY BAAQMD AND OTHER AGENCIES**

In accordance with CEQA, BAAQMD must consider the environmental implications of PG&E's ACP prior to determining whether to approve it. PG&E presently intends to use the ACP to comply with Rule 9-11 on an ongoing basis, and the ACP will require annual approval by BAAQMD. Each approval of an ACP by the District includes an opportunity for public review and comment. This EIR is intended to serve as the environmental analysis not only for BAAQMD's current approval of the ACP, but also for any subsequent ACP approvals required by BAAQMD, except as otherwise required by State CEQA Guidelines §15162 (Cal. Code Regs., tit. 14, § 15162).

BAAQMD is not aware of any other agencies that will need to use this EIR or that have approval authority over PG&E's ACP.

## **CHAPTER 2**

### ***PROJECT DESCRIPTION***

#### **2.1 PROJECT OBJECTIVE**

PG&E's objective is to comply with BAAQMD Rule 9-11's limit on NOx emissions from its remaining active boiler, Boiler No. 7, at its Hunters Point Power Plant (HPPP) facility by using an Alternative Compliance Plan (ACP) under District Rule 2-9. PG&E's proposed ACP would use IERCs generated by over-controlling sources at the HPPP facility to demonstrate compliance with Rule 9-11.

Figure 2-1 shows the general location of the HPPP facility, and Figure 2-2 is a site plan of the facility showing the location of the active boiler.

#### **2.2 DESCRIPTION OF RULE 9-11 AND RULE 2-9**

##### **2.2.1 RULE 9-11**

BAAQMD Rule 9-11 is designed to reduce NOx and CO emissions from electric utility steam generation boilers located in the Bay Area. Rule 9-11 was adopted in part to fulfill the Best Available Retrofit Control Technology (BARCT) requirements under the California Clean Air Act.

Rule 9-11-309 allows electric power generating facilities to comply with Rule 9-11's NOx requirements by complying with systemwide NOx emission limits under an "Advanced Technology Alternative Emission Control Plan" (ATAECP). These hourly

systemwide limits apply to the group of affected boilers as whole, not to individual units within the group.

Rule 9-11-309.1 establishes a schedule of diminishing NOx emissions limits. The 2004 systemwide NOx emissions limit will be 0.037 lb/MMBTU, calculated on an hourly basis. Starting in 2005, the systemwide NOx emissions limit will be 0.018 lb/MMBTU.

Prior to March 2001, PG&E operated five boilers at the HPPP facility. These five boilers operated under an ATAECF in accordance with Rule 9-11-309. In March 2001, four of the five boilers were permanently shutdown. Boiler No. 7 is the only boiler remaining in operation and therefore will be the only source at the HPPP facility subject to the requirements of Rule 9-11-309. Table 2-1 identifies Boiler No. 7 as the only "affected boiler" at PG&E's HPPP facility.

### **2.2.2 RULE 2-9**

One option to comply with Rule 9-11-309 is to put controls on the affected boiler, so that the NOx emission rate complies with the hourly average limit specified in Rule 9-11-309.1. Rule 2-9 provides an alternative way to comply with Rule 9-11-309, by allowing PG&E to reduce NOx emissions more than required elsewhere in the HPPP facility, and, following the specific requirements of Rule 2-9, using the extra emission reductions in satisfaction of emissions reductions that would otherwise be required by Rule 9-11-309. For each calendar year (referred to as a credit generation period), PG&E has received and will continue to receive an IERC certificate showing the number of tons of NOx that PG&E voluntarily reduced that year. After the certificate is issued, PG&E can use the certificate to comply with the emission limits in Rule 9-11.

BAAQMD's Board of Directors adopted Rule 2-9, titled the Interchangeable Emission Reduction Credit Rule, on April 7, 1999 in accordance with certain provisions of the California Clean Air Act (Health & Safety Code §§ 39000 et seq.) to create a market-based incentive air pollution control program (Health & Safety Code §§ 39607.5, 39616, 40001, and 40920.6). Health & Safety Code § 39607.5(a) directed the California Air Resources Board (CARB) to "develop, and adopt in a public hearing a methodology for use by [local air pollution control] districts to calculate the value of credits issued for emission reductions from stationary, mobile, indirect, and area-wide sources, including those issued under market-based incentive programs, when those credits are used interchangeably." The Legislature declared that "[w]hile traditional command and control air quality regulatory programs are effective in cleaning up the air, other options for improvement in air quality, such as market-based incentive programs, should be explored, provided that those programs result in equivalent emission reductions while expending fewer resources and while maintaining or enhancing the state's economy." Health & Safety Code § 39616(a)(2).

Health & Safety Code § 40001(d)(1) states that "district rules and regulations shall include a process to approve alternative methods of complying with emission control requirements that provide equivalent emission reductions, emissions monitoring, and recordkeeping." Finally, the operative provisions of Health & Safety Code § 40920.6

require all local air pollution control districts to allow the use of emission reduction credits in lieu of compliance with BARCT requirements (such as the 0.037 lb/ MMBTU NOx limit of Rule 9-11). Specifically, § 40920.6(c) provides that "a district shall allow ... emission reduction credits which meet all of the requirements of state and federal law, including, but not limited to, the requirements that those emission reduction credits be permanent, enforceable, quantifiable, and surplus, in lieu of any requirement for [BARCT], if the credit also complies with all district rules and regulations affecting those credits."

Rule 2-9 is also based upon and in compliance with regulations adopted by CARB as required by Health & Safety Code § 39607.5. CARB adopted §§ 91500 through 91508 of Title 17, California Code of Regulations, in response to Health & Safety Code § 39607.5, to establish principles and criteria for local air pollution control districts to use when developing programs to allow the use of interchangeable credits as a compliance alternative for meeting specified air pollution control requirements in district rules and regulations.

Rule 2-9 has certain provisions that help BAAQMD attain and maintain ambient air quality standards, such as requiring that the emissions reductions to be credited be in place and approved by BAAQMD before they can be used in an ACP, and that the credits be discounted by 10% to provide for a net environmental benefit (*i.e.*, emission credits that are applied to meet BARCT regulations must be 10% greater than the actual reduction required by the BARCT regulation). Also, the credits may not be part of emission reductions that have already been prescribed in BAAQMD's Clean Air Plan. These aspects of Rule 2-9 ensure that there will be a net benefit in air quality.

## **2.3 PG&E'S ALTERNATIVE COMPLIANCE PLAN**

### **2.3.1 DESCRIPTION OF THE ACP**

PG&E proposes to comply with the NOx emission limits of Rule 9-11-309 by using IERCs. Under its ACP (BAAQMD Application No. 6811), PG&E will calculate its actual emissions from the boiler that is subject to the Rule 9-11-309 NOx emission limit on an hourly basis. It will also calculate its "allowable emissions," based on its actual heat usage and the applicable Rule 9-11-309 emission limit (0.037 lb/MMBTU in 2004 and 0.018 lb/MMBTU thereafter). If PG&E's actual emissions are higher than the allowable emissions, PG&E will provide BAAQMD with IERCs equal to the difference plus 10% (as required by the "environmental surcharge" provision of Rule 2-9-306). PG&E's ACP requires quarterly reports showing the amount of credits required and annual reports demonstrating that PG&E has sufficient IERCs to satisfy its ACP.

Under the proposed ACP, PG&E plans to operate the HPPP facility only to the extent required by the Federal Energy Regulatory Commission (FERC), California Independent System Operator (ISO), and PG&E's obligations under its Reliability Must Run (RMR) Contract with the ISO. PG&E plans to use IERCs only to the extent necessary to make such operations comply with the emissions limits imposed by Rule 9-11-309. In any

event, PG&E plans to use no IERCs in 2003, no more than 100 tons in 2004, and no more than 175 tons in 2005. As described in the following section, PG&E already has obtained sufficient IERCs to meet its proposed operations for 2004. Furthermore, PG&E has recently applied for IERCs for use in 2005. (See BAAQMD Application No. 7375.)

PG&E plans to continue its ACP until permanent shutdown of the HPPP facility. The actual quantity of IERCs needed from year-to-year may vary depending on other operating factors that are not part of or caused by the ACP, such as power demand and operation requirements of the ISO.

On July 9, 1998, PG&E signed an agreement with the City and County of San Francisco to permanently shutdown the HPPP as soon as the ISO and FERC authorize PG&E to terminate the RMR Contract. Moreover, as described more fully in Section 2.4, PG&E has committed to advocating for regulatory approval of such closure.

### **2.3.2 DESCRIPTION OF PG&E'S IERCs**

PG&E began over-controlling NO<sub>x</sub> emissions at its Potrero and Hunters Point Power Plants in order to generate IERCs beginning as early as 1997. A brief description of the methods used by PG&E to reduce NO<sub>x</sub> emissions at the Hunters Point Power Plant is set forth in the Initial Study (Appendix F) at pages 15-16. PG&E first applied to BAAQMD for IERCs on April 15, 1999: Application Nos. 22441 (Potrero) and 22504 (Hunters Point).<sup>1</sup>

Rule 2-9 allows IERCs to be granted for up to 30 months prior to the date of the first application for IERCs. Therefore PG&E's applications sought IERCs for three "credit generation periods" (CGPs): 1997, 1998, and 1999. With the exception of the 1999 CGP for Potrero, each CGP constituted the calendar year January 1 through December 31. Because PG&E sold the Potrero facility on April 16, 1999, the 1999 CGP for Potrero was the period January 1 through April 16.

Under Rule 2-9, the baseline period for determining IERCs is the five-year period preceding the first CGP, so PG&E's application established IERC baseline period as January 1, 1992 through December 31, 1996.

To calculate the quantity of IERCs, BAAQMD must first calculate the baseline adjusted emissions during that period. For the 1992-1996 baseline period, BAAQMD calculated the HPPP's average fuel throughput to be 12,818,052 MMBTU/yr and its NO<sub>x</sub> emission rate from the five active boilers to be 0.170 lb/MMBTU.<sup>2</sup> To calculate IERCs for a given CGP, the baseline emission rate must be "adjusted" downward to reflect the most stringent of Reasonably Available Control Technology (RACT), BARCT, and District

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<sup>1</sup> IERCs generated at facilities under common ownership and within 3 miles of each other may be used at either facility. Rules 2-9-211, 2-9-302. The Potrero and Hunters Point Power Plants are located within 3 miles of each other.

<sup>2</sup> As described below, PG&E agreed to relinquish all IERCs generated at the Potrero facility and has retained only 100 tons of IERCs generated at Hunters Point in 1999. Therefore, baseline information is given only with respect to Hunters Point.

rules and regulations in effect during the CGP. Here, the most stringent of these standards was Rule 9-11-309.1, providing the applicable BARCT emissions rates of 0.188 lb/MMBTU for 1997, 0.160 for 1998, and 0.115 for 1999. Therefore, the respective baseline adjusted emissions rates are 0.170 for CGP 1997, 0.160 for CGP 1998, and 0.115 for CGP 1999. The baseline adjusted emissions for each CGP are then calculated by multiplying the respective baseline adjusted emissions rate by the average throughput.

Rule 2-9 provides detailed formulas for calculating the quantity of IERCs earned relative to the baseline adjusted emissions. In general terms, a facility may generate IERCs equal to its reduction in total emissions if it operates its sources at a lower emission rate than its baseline emission rate. If the facility increases its throughput, however, Rule 2-9 reduces the quantity of IERCs earned by the amount of emissions associated with the increased throughput. If the facility decreases its throughput, the facility cannot obtain IERCs for the associated reduction in emissions, even though a reduction in throughput reduces total NOx emissions.

Under Rule 2-9, BAAQMD may issue IERCs only if it determines that PG&E's emission reductions are real, enforceable, surplus, and permanent. As described in more detail in BAAQMD's engineering evaluations for PG&E's IERCs and ACP, BAAQMD has determined that PG&E's operation of the boilers below the baseline NOx emission rate described above satisfies these criteria.

District staff have reviewed the baseline emissions data and concluded that the methodology and the precision were proper and consistent with that used for other credit calculations and compliance determinations by the District.

In November 2001, BAAQMD approved PG&E's Application Nos. 22441 and 22504 and issued to PG&E Certificates reflecting the banked IERCs. BAAQMD issued six Certificates in total – Nos. 6-A, 6-B, 6-C, 7-A, 7-B, and 7-C – to reflect the three CGPs and two applications. Table 2-2 shows the IERCs that PG&E generated and that were approved by BAAQMD in November 2001.

Certain third parties appealed BAAQMD's approval of Application Nos. 22441 and 22504. This appeal was resolved by a settlement agreement. Pursuant to that settlement agreement, PG&E relinquished all IERCs embodied in 6-A, 6-B, 6-C, 7-A, and 7-B and all but 100 tons of IERCs embodied in Certificate No. 7-C. On April 29, 2003, BAAQMD cancelled these Certificates and issued a new Certificate 7-D with a December 31, 2004, expiration date for 100 tons of IERCs generated at the Hunters Point facility in the 1999 CGP, previously embodied in Certificate No. 7-C. The appeal and its resolution are described in more detail in Section 2.4.

PG&E recently submitted an IERC application (Application No. 7375) for emissions reductions that occurred during the year 2000. In the application, PG&E seeks 125.58 tons of IERCs which, if granted, may be used during the year 2005. BAAQMD is currently reviewing this application.

## **2.4 PRIOR LITIGATION CONCERNING PG&E'S IERCS AND ACP**

On December 29, 2000, BAAQMD gave public notice of its preliminary decision to issue IERCs to PG&E in response to PG&E's Application Nos. 22441 and 22504. During the public comment period, BAAQMD received written comments from several community groups including, Communities for a Better Environment (CBE), Southeast Alliance for Environmental Justice (SAEJ), and Bayview Hunters Point Community Advocates (BHPCA). On November 2, 2001, BAAQMD gave final approval of Application Nos. 22441 and 22504 and issued Certificates 6-A, 6-B, 6-C, 7-A, 7-B, and 7-C.

On November 13, 2001, CBE, SAEJ, BHPCA, and Literacy for Environmental Justice (LEJ) (collectively, the appellants) filed an appeal with BAAQMD's Hearing Board (Docket No. 3364) regarding BAAQMD's November 2, 2001 approval. PG&E subsequently intervened as real party in interest.

After discovery and months of negotiations, PG&E and the appellants entered into a settlement agreement in October 2002 (the Settlement Agreement). Among other things, PG&E agreed to relinquish all IERCs embodied in 6-A, 6-B, 6-C, 7-A, and 7-B and all but 100 tons of IERCs embodied in Certificate No. 7-C. PG&E further agreed to use no more than 100 tons of IERCs in 2004 and 175 tons of IERCs in 2005. PG&E also agreed to prepare an EIR with respect to any ACP application. The appellants agreed to dismiss their appeal upon BAAQMD's cancellation of IERCs relinquished by PG&E. All parties agreed to advocate to the ISO for the closure of the HPPP facility at the soonest possible date.

On April 29, 2003, BAAQMD cancelled the IERC Certificates at PG&E's request and issued a new Certificate 7-D with a December 31, 2004, expiration date for 100 tons of IERCs generated at the Hunters Point facility in the 1999 CGP, IERCs that were previously embodied in Certificate No. 7-C.

The appellants dismissed their appeal on May 8, 2003.

In the proposed ACP, PG&E would be limited to using no more than 100 tons of IERCs in 2004 and 175 tons of IERCs in 2005, in accordance with the Settlement Agreement.

**FIGURE 2-1 LOCATION OF HUNTERS POINT POWER PLANT**

[See Figure 2-1 on the next page]

**FIGURE 2-2 SITE PLAN OF THE HPPP FACILITY SHOWING LOCATION OF  
AFFECTED BOILER**

[See Figure 2-2 on the next page]

**TABLE 2-1**  
**DESCRIPTION OF AFFECTED BOILER – BOILER NO. 7**

S-Number:	S-7
Make/Type:	Combustion Engineering
Model:	Type R
Capacity:	1,720 MMBTU/hr
Description:	<p>Boiler No. 7 is a Combustion Engineering steam generator and is rated at 1,170,000 lb/hr superheated steam at 1000 degrees Fahrenheit and 1850 psig, and 1,040,000 lb/hr reheated steam at 1000 degrees Fahrenheit and 480 psig. The steam generator is a radiant-type boiler with water-cooled furnace, two-stage superheater, reheater, economizer, and forced and induced draft fans. The maximum heat input to the boiler is 1,720 MMBTU/hr.</p> <p>The boiler is fired by fifteen gas burners selectively fueled by natural gas.</p>

Boiler No. 7 has been retrofitted with low NOx burners. The flue gas recirculating fan is part of the NOx retrofit. The flue gas recirculating fan takes suction from the boiler economizer outlet flue and discharges the flue gas through mixing sections into the combustion air stream to the furnace windbox and the furnace hopper.

**TABLE 2-2  
IERCs GENERATED BY PG&E**

<b>PG&amp;E Facility</b>	<b>Credit Generation Period</b>	<b>Baseline Adjusted Emissions <i>tons NOx</i></b>	<b>Actual Emissions or Non-Curtailment Emissions<sup>1</sup> <i>tons NOx</i></b>	<b>IERCs Generated <i>tons NOx</i></b>
Hunters Point	1997	1089.5	680.0	409.5
	1998	1025.4	570.1	455.3
	1999	737.0	474.3	262.7
Potrero	1997	835.1	685.6	149.5
	1998	824.8	591.1	233.7
	1999	146.2	114.4	31.8
<b>Total IERCs Generated to Date</b>				1542.5 <sup>2</sup>

- 1 Pursuant to BAAQMD Rule 2-9-603, IERCs are calculated by subtracting the greater of the actual emissions and non-curtailment emissions from the baseline adjusted emissions.
- 2 PG&E has relinquished all but 100 tons of these IERCs.

## **CHAPTER 3**

### ***ENVIRONMENTAL ANALYSIS***

The Initial Study prepared for PG&E's ACP found the proposed project could not have a significant effect on the environment. Therefore, an EIR is not required, and a negative declaration would be sufficient to comply with CEQA. Nevertheless, the District has prepared this EIR (even though one is not required) because, pursuant to the Settlement Agreement, PG&E has requested that the District do so. The reasons for the District's finding (of no significant effect on the environment) are set forth in the June 2, 2003 Initial Study, a copy of which is attached as Appendix F. Because third parties have expressed interest in potential impacts on air quality, this EIR provides further discussion on that point.

### **3.1 ENVIRONMENTAL SETTING**

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features that influence pollutant movement dispersal. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, and consequently affect air quality. The following description of the project's environmental setting provides (a) an overview of region-specific information related to climate and topography, (b) regulatory context followed by a discussion of plans, policies, and regulations, and (c) existing air quality conditions pertaining to the Hunters Point area.

#### **3.1.1 CLIMATE AND METEOROLOGY**

PG&E's HPPP facility is located in the City of San Francisco within the San Francisco Bay Area (Bay Area) Air Basin. The Bay Area Air Basin encompasses the nine-county region including all of Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin and Napa Counties, and the southern portions of Solano and Sonoma Counties. The climate of the greater Bay Area, including San Francisco, is a Mediterranean-type climate characterized by warm, dry summers and mild, wet winters. The climate is determined largely by a high-pressure system that is almost always present over the eastern Pacific Ocean off the West Coast of North America. High-pressure systems are characterized by an upper layer of dry air that warms as it descends, restricting the mobility of cooler marine-influenced air near the ground surface, and resulting in the formation of subsidence inversions. In winter, the Pacific high-pressure system shifts southward, allowing storms to pass through the region. During summer and fall, emissions generated within the Bay Area can combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are conducive to the formation of photochemical pollutants, such as ozone, and secondary particulates, such as sulfates and nitrates.

The HPPP facility is located in the northern portion of the Peninsula climatological subregion of the Bay Area, which extends from northwest of San Jose to the Golden

Gate. The Santa Cruz Mountains occupy the center of the peninsula, with elevations exceeding 2,000 feet at the southern end, decreasing to 500 feet in South San Francisco. San Francisco lies at the northern end of the peninsula, and, with topography mostly below 200 feet, is subject to considerable marine air flow, making its climate cool and windy.

Temperatures in San Francisco are moderated by proximity to the San Francisco Bay and the Pacific Ocean. Daily temperatures generally range from the 50s to the low 70s in the summer, while in the winter, average lows are in the mid-40s and average highs are in the mid-50s (°F). Mean daily temperatures are about 63 °F in summer and 50 °F in winter.

Over seventy years of temperature and precipitation data are available at San Francisco Airport, located approximately eight miles south of the plant. San Francisco Airport has an average annual temperature of 57.2 °F. Based on the years of record from 1925 to 1994, normal annual total precipitation is 19.7 inches, with the highest monthly average precipitation of 4.35 inches occurring in January.

Wind and mixing height are two key meteorological parameters governing the potential for air pollution. Winds average 5 to 10 mph throughout the peninsula and are generally highest along the coast. However, winds on the eastern side of the peninsula are often high in certain areas, such as near the San Bruno and Crystal Springs Gaps, which allow the marine layer to pass across the peninsula. Based on a study performed in 1979-80 at the nearest upper-level meteorological station (which is at Oakland), morning mixing heights averaged between 1,750 and 1,860 feet in summer and fall and over 3,600 feet in winter and spring. Afternoon mixing heights ranged from between 2,150 and 3,050 feet in summer and fall to over 3,950 feet in winter and spring. These mixing heights plus relatively high winds off the ocean provide generally favorable conditions in San Francisco for the dispersion of pollutants.

### **3.1.2 REGULATORY CONTEXT**

#### **CRITERIA AIR POLLUTANTS**

Regulation of air pollution is achieved through both national and state ambient air quality standards and emission limits for individual sources of air pollutants. As required by the federal Clean Air Act, the U. S. Environmental Protection Agency (U. S. EPA) has identified criteria pollutants and established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for ozone, CO, nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM-10), and lead. These pollutants are called criteria air pollutants because standards have been established for each of them to meet specific public health and welfare criteria. California has adopted more stringent ambient air quality standards for most of the criteria air pollutants (referred to as State Ambient Air Quality Standards or SAAQS). Table 3-1 lists both sets of ambient air quality standards (*i. e.*, national and state) and provides a brief discussion of the related health effects and principal sources for each pollutant. As required by the federal Clean Air Act and the California Clean Air Act, air

basins or portions thereof have been classified as either "attainment" or "nonattainment" for each criteria air pollutant, based on whether or not the standards have been achieved. Nonattainment areas are also required to prepare air quality plans that include strategies for achieving attainment. Air quality plans developed to meet federal requirements are referred to as State Implementation Plans (SIPs).

## **REGULATORY AGENCIES**

U. S. EPA is responsible for implementing the myriad of programs established under the federal Clean Air Act, such as establishing and reviewing the NAAQS and judging the adequacy of SIPs, but has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented.

CARB is responsible for establishing and reviewing the SAAQS, compiling the California SIP and securing approval of that plan from U. S. EPA, and identifying toxic air contaminants. CARB also regulates mobile sources of emissions in California, such as construction equipment, trucks, and automobiles, and oversees the activities of air quality districts, which are organized at the county or regional level. The local air districts are primarily responsible for regulating stationary emissions sources at industrial and commercial facilities within their geographic areas and for preparing the air quality plans that are required under the federal Clean Air Act and California Clean Air Act. These regional air quality plans prepared by local air districts throughout the state are compiled by CARB to form the SIP. Local air districts also have responsibility and authority to adopt transportation control and emission reduction programs for indirect and area-wide emission sources. BAAQMD is the regional agency with jurisdiction over the nine-county region located in the Bay Area Air Basin. Local councils of governments, county transportation agencies, cities and counties, and various non-governmental organizations also join in the efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs.

## **AIR QUALITY PLANS, POLICIES AND REGULATIONS**

### **Plans and Policies**

The HPPP facility is located in the Bay Area Air Basin, which is currently designated "nonattainment" for state and national ozone standards and for the state PM-10 standard. Urbanized parts of the Bay Area, including the site, are also designated as "maintenance" areas for the national CO standard. The "maintenance" designation denotes that the area, now "attainment," had once been designated as "nonattainment." The Bay Area is "attainment" or "unclassified" with respect to the other ambient air quality standards. Table 3-2 shows the attainment status of the Bay Area with respect to the federal and state ambient air quality standards for different criteria pollutants.

As noted earlier, the federal Clean Air Act and the California Clean Air Act require plans to be developed for areas designated as nonattainment (with the exception of areas

designated as nonattainment for the state PM-10 standard). Plans are also required under federal law for areas designated as "maintenance" for national standards. Such plans are to include strategies for attaining the standards. Currently, there are three plans for the Bay Area:

- Ozone Attainment Plan for the 1-Hour National Ozone Standard (Association of Bay Area Governments (ABAG), 1999), developed to meet federal ozone air quality planning requirements;
- Bay Area 2000 Clean Air Plan (BAAQMD, 2000a), the most recent triennial update of the 1991 Clean Air Plan developed to meet planning requirements related to the state ozone standard; and
- Carbon Monoxide Maintenance Plan (ABAG, 1994), developed to ensure continued attainment of the national carbon monoxide standard.

BAAQMD, the Metropolitan Transportation Commission, and ABAG have prepared a Bay Area 2001 Ozone Attainment Plan. This plan is a proposed revision to the Bay Area part of California's plan to achieve the national ozone standard. The plan is in response to U. S. EPA's partial approval and partial disapproval of the Bay Area's 1999 Ozone Attainment Plan and finding of failure to attain the NAAQS for ozone. The revised plan was adopted by the boards of the co-lead agencies at a public meeting on October 24, 2001, but is awaiting approval from U.S. EPA. This plan amends and supplements the 1999 Plan and demonstrates attainment of the national ozone standard by 2006. On April 11, 2003, the regional agencies submitted a Reasonable Further Progress (RFP) Report to the Air Resources Board for transmittal to U.S. EPA. The RFP Report describes the region's recent progress toward attaining the 1-hour national ozone standard. On July 16, 2003, U.S. EPA proposed approval of the 2001 Ozone Attainment Plan.

## **Rules and Regulations**

The regional agency primarily responsible for developing air quality plans for San Francisco is BAAQMD, the agency with permit authority over most types of stationary emission sources in the Bay Area. BAAQMD exercises permit authority through its rules and regulations. Both federal and state ozone plans rely heavily upon stationary source control measures set forth in BAAQMD's rules and regulations. In contrast to the ozone plans, the CO Maintenance Plan relies heavily on mobile source control measures.

Sources at power plants are subject to a number of rules and regulations. The subject of this project is compliance of the affected sources at PG&E's HPPP facility with the requirements of Rule 9-11, which regulates NO<sub>x</sub> emissions from electric power generating steam boilers. The other rule relevant to the proposed ACP is Rule 2-9, which regulates use of IERCs from stationary sources of NO<sub>x</sub>. Chapter 2.2 ("Description of Rule 9-11 and Rule 2-9") of this EIR provides details of the regulatory history of these two regulations.

## San Francisco General Plan

The City and County of San Francisco has land use jurisdiction over the location of the HPPP facility. The Air Quality Element of the City and County of San Francisco General Plan contains the following objectives and policies that are relevant to the HPPP facility:<sup>3</sup>

**OBJECTIVE 1: Adhere to State and Federal Air Quality Standards and Regional Programs.**

**POLICY 1.1:** Cooperate with regional agencies to promote air quality improvement in San Francisco which, in turn, will contribute to air quality improvements at the regional level.

Air pollutants tend to sprawl throughout the region and do not recognize municipal boundaries. Although San Francisco has not violated air quality standards in recent years, westerly winds carry the pollutants generated in the city to the eastern and southern areas of the region. Air quality improvement in the Bay Area requires the cooperation of all of the cities and counties in the air basin. Any improvement in the air quality in the city contributes to air quality improvements at the regional level. San Francisco should cooperate with regional agencies to implement all feasible programs developed to improve air quality at the regional level.

**POLICY 1.2:** Adhere to State and Federal air quality standards in the future through sustained efforts and continued budgetary resources.

Seasonal and daily meteorological conditions affect the formation of some pollutants in the ambient air. For example, the formation of ozone only occurs during warmer temperatures in the presence of ozone precursors and sunlight. Since weather conditions vary greatly in the Bay Area from one year to another, assuming the same level of air pollutants in the air, air quality standards can be achieved in one year, yet can be violated in a subsequent year.

Although San Francisco has not violated air quality standards in recent years, it contributes to the regional air quality problems. Maintaining and adhering to air quality standards will require ongoing efforts by all cities and counties in the Bay Area. The City of San Francisco should continue to undertake all necessary measures to assure adherence to air quality standards.

**POLICY 1.3** Support and encourage implementation of stationary control measures established by the State.

Stationary sources refer to industrial or commercial activities that emit air pollutants into the atmosphere through fixed vents or stacks. The Air District is

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<sup>3</sup> See <http://www.ci.sf.ca.us/planning/egp/airqu.htm>.

the State agency responsible for implementation of stationary control measures in the Bay Area. To encourage and ensure implementation of stationary sources control measures there needs to be better coordination between the City and State agencies to make sure that development of new stationary sources of pollution are reviewed and permitted for air quality impacts evaluation by the Air District.

## **EXISTING AIR QUALITY**

BAAQMD operates a regional monitoring network that measures the ambient concentrations of the six criteria pollutants. Existing and probable future levels of air quality in the HPPP facility area can generally be inferred from ambient air quality measurements conducted by BAAQMD at its monitoring stations. The major pollutants of concern in the Bay Area – ozone, the ozone precursor NO<sub>x</sub>, CO, and particulate matter – are monitored at a number of locations. The monitoring station closest to the HPPP facility that measures criteria pollutants is the Arkansas Street station in San Francisco. The Arkansas Street station is located less than three miles north-northwest of the HPPP facility and monitors ozone, NO<sub>2</sub>, CO, PM-10, and PM-2.5. Table 3-3 shows a five-year summary of monitoring data collected from this station. Table 3-3 also compares measured pollutant concentrations with state and national ambient air quality standards.

## **OZONE**

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and NO<sub>x</sub>. ROG and NO<sub>x</sub> are precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. Ozone is a regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of ROG and NO<sub>x</sub> under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone.

As shown in Table 3-3, there have been no exceedances of the applicable ozone standards – the state and federal hourly standards and the federal eight-hour standard – at the Arkansas Street station in the past five years. The 2001 CARB inventory data show that average daily emissions of the principal ozone precursors, ROG and NO<sub>x</sub>, from all anthropogenic (non-natural) sources in San Francisco were estimated at 51 and 76 tons, respectively. Electric utilities accounted for 0.06% of ROG and 3% of NO<sub>x</sub> emissions, while mobile sources made up about 57% of ROG and 91% of NO<sub>x</sub> emissions.

## **CARBON MONOXIDE**

CO is a non-reactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease or anemia.

There have been no exceedances of state and national eight-hours CO standards at the Arkansas Street station over the last five years. CARB inventory data indicate that average daily anthropogenic CO emissions in San Francisco were estimated at 259 tons per day in 2001, with electric utilities and mobile sources contributing approximately 0.04% and 92% of that total, respectively.

## **PARTICULATE MATTER**

PM-10 and PM-2.5 consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. (A micron is one-millionth of a meter). PM-10 and PM-2.5 represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of dust-and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (*e. g.*, sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (*e. g.*, chlorides or ammonia) that may be injurious to health. Particulates also can damage materials and reduce visibility.

PM-10 emissions in the HPPP facility area are mainly from urban sources, dust suspended by vehicle traffic and secondary aerosols formed by reactions in the atmosphere. Particulate concentrations near residential sources generally are higher during the winter, when more fireplaces are in use and meteorological conditions prevent the dispersion of directly-emitted contaminants.

In the past 5 years, the Arkansas Street station has measured a total of 16 daily exceedances of the state PM-10 standard, and no exceedances of the federal PM-10 standard. In the past four years, there have been seven measured exceedances of the federal PM-2.5 standard. The 2001 CARB inventory data show that average daily anthropogenic emissions of PM-10 in San Francisco were estimated at 14 tons per day. Of this, about 32% came from road dust, 23% from mobile sources, 17% from residential fuel combustion (such as wood-burning stoves and fireplaces) and 0.8% from electric utilities.

## **NITROGEN OXIDE**

Air is about 80% nitrogen. Whenever anything burns at high enough temperatures a certain amount of nitrogen in the air burns as well. Burning, also known as oxidation, occurs when material combines with oxygen in such a way as to release energy in the form of light and heat. The resulting compounds containing nitrogen are primarily nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>). Mixtures of these two compounds are known as oxides of nitrogen, and they are involved in photochemical reactions that produce ozone. At concentrations experienced in the Bay Area, nitrogen dioxide can be seen as a brown haze. On days with otherwise good visibility, the coloration effects will be noticeable.

In the past five years, there have been no measured exceedances of the state NO<sub>x</sub> standards at the Arkansas Street station.

## **OTHER CRITERIA POLLUTANTS**

The standards for SO<sub>2</sub> and lead are being met in San Francisco, and the latest pollutant trends suggest that these standards will not be exceeded in the foreseeable future. BAAQMD monitoring stations have not recorded an exceedance of state or federal standards since 1976. Ambient levels of airborne lead are well below the state and federal standard and are expected to continue to decline.

## **TOXIC AIR CONTAMINANTS**

Toxic air contaminants are pollutants that are associated with acute, chronic, or carcinogenic effects but for which no ambient air quality standard has been established or, in the case of carcinogens, is appropriate. The ambient background of toxic air contaminants is the combined result of many diverse human activities, including gasoline stations, automobiles, dry cleaners, industrial operations, hospital sterilizers, and painting operations. In general, mobile sources contribute more significantly to health risks than do stationary sources (BAAQMD, 2000b). BAAQMD operates a network of monitoring stations that measure ambient concentrations of certain toxic air contaminants that are associated with strong health-related effects and are present in appreciable concentrations in the Bay Area, as in all urban areas. BAAQMD estimates that the average lifetime cancer risk from toxic air contaminants in the ambient air in the Bay Area (based on ambient air quality monitoring data for 1999) is 186 cases of cancer per million residents (down from 303 in one million based on 1995 data). Of the pollutants for which monitoring data are available, benzene and 1,3-butadiene (which are emitted primarily from motor vehicles) account for over one-half of the average calculated cancer risk (BAAQMD, 2000b). Benzene levels have declined dramatically since 1996 with the advent of Phase 2 reformulated gasoline. The use of reformulated gasoline also appears to have led to significant decreases in 1,3-butadiene.

## **SENSITIVE RECEPTORS**

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater-than-average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational users are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

Impacts to sensitive receptors are addressed by the State and District CEQA Guidelines. Appendix G to the State CEQA Guidelines includes impacts to sensitive receptors as a criterion for evaluating significant impacts on air quality. Specifically, Appendix G provides that a significant impact to sensitive receptors occurs when a sensitive receptor is exposed to "substantial pollutant concentrations." In addition, the District's CEQA Guidelines (at pages 10-11) disapprove of land use conflicts that may cause potential localized impacts on sensitive receptors. (BAAQMD, 1999).

The proposed project is located at the existing HPPP facility and does not change the existing land use. The properties surrounding the HPPP facility are zoned for heavy and light industry and commercial uses. To the northwest of the site is Jennings Street, on the other side of which is Assessor's Block No. 4570, zoned heavy industrial. To the southwest of the site is Evans Avenue and Assessors' Block No. 4604A, zoned heavy industrial. Across Evans Avenue is Assessors' Block No. 4603A, zoned neighborhood commercial. To the west, across the intersection of Jennings and Evans, is Assessors' Block No. 4602A, zoned partly neighborhood commercial and partly light industrial. To the northeast is Assessors' Block No. 4571, zoned heavy industrial. To the east and southeast is India Basin, a small inlet off the San Francisco Bay. This project implicates none of the land use conflicts disapproved by the District's CEQA Guidelines, involves no new source of air pollutants, and thus would not result in exposure of sensitive receptors to substantial pollutant concentrations. Therefore, no impacts from the project on sensitive receptors are expected to occur.

### **3.2 SIGNIFICANCE THRESHOLDS**

For project-level impact analysis, BAAQMD has established specific quantitative thresholds to define if a project has the potential to cause a significant air quality impact. Under BAAQMD's CEQA Guidelines, a net increase of 80 pounds per day of ROG, NO<sub>x</sub> or PM-10 would be considered significant. Also, an increase of 550 pounds per day of CO would be considered significant if it leads to a possible local violation of the ambient CO standards (*i.e.*, if it creates a "hot spot"). For projects that would not cause a significant increase of ROG, NO<sub>x</sub>, or PM-10 emissions, the cumulative effect is evaluated based on a determination of the consistency of the project with the regional Clean Air Plan.

BAAQMD also has specific guidelines related to significance thresholds for emissions of toxic air contaminants and odor. These guidelines are not implicated in this EIR because there is no indication that the project has the potential to create substantial emissions of toxic air contaminants or increase odors.

### **3.3 ANALYSIS OF ENVIRONMENTAL IMPACTS**

#### **3.3.1 ANALYSIS OF IMPACTS ON AIR QUALITY**

In order to analyze the environmental impacts of a project, it is important to first define the scope of the project. Under the State CEQA Guidelines, the term "project" means "the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment."<sup>4</sup> Thus, for purposes of this EIR, PG&E's project includes 1) the voluntary reductions of the HPPP boiler emission rates below the Rule 9-11 limits and below baseline emission rates (as defined in Rule 2-9) during the relevant CGPs in order to generate IERCs; and 2) the use of these IERCs under the proposed ACP.

The next step in the impact analysis is defining the proper baseline against which to measure the environmental impact. While the baseline "normally" constitutes the environmental setting at the time of the notice of preparation, BAAQMD has discretion to choose a more appropriate baseline.<sup>5</sup> Here, the more appropriate baseline is the environmental context that existed in 1996, *i.e.*, prior to first CGP. This baseline is appropriate because it represents the context immediately prior to the beginning of credit generation, and it coincides with the baseline period established in Rule 2-9, the commencement of the entire IERC-ACP process.

In light of the above-defined project and baseline, PG&E's project does not have a significant negative impact on air quality. As set forth in Section 2.3.3 above, PG&E has received credits for voluntary reductions of over 1,500 tons of NOx emissions. To qualify as IERCs, PG&E's emission reductions at its boilers must be real, surplus, enforceable and quantifiable within the meaning of Rule 2-9. These requirements, especially the requirement that PG&E's reductions be "real," ensure that the emission reductions generated for use in PG&E's ACP have a net beneficial impact on the environment. PG&E's IERCs meet these requirements.

Of the over 1,500 tons of IERCs earned to date, PG&E proposes to use only 100 tons of those credits in 2004. PG&E has relinquished the remaining IERCs, and thus will never use over 1,400 tons of IERCs that it has earned.

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<sup>4</sup> State CEQA Guidelines § 15378(a).

<sup>5</sup> State CEQA Guidelines § 15125(a); *Save Our Peninsula Comm. v. Monterey County Bd. of Supervisors*, 87 Cal. App. 4th 99, 126 (2001) (rejecting as the baseline water production figures over the three years closest to project approval in favor of older, historical water use on the property when the project began, which more accurately represented baseline).

PG&E intends to continue to use an ACP to comply with Rule 9-11 until permanent shutdown of the HPPP facility. Thus, for any year after 2004 that PG&E continues to operate HPPP, PG&E will need to earn IERCs by demonstrating reductions of the NOx emission rate of Boiler No. 7. Moreover, the 10% environmental benefit surcharge guarantees that the emissions reductions embodied in IERCs will exceed any emissions above Rule 9-11 levels.

### **3.4 CUMULATIVE IMPACTS**

CEQA only requires the District to consider cumulative air quality impacts if the project under consideration would increase emissions. Under PG&E's proposed project, voluntary NOx emissions reductions (as embodied in IERCs) will exceed any NOx emissions above Rule 9-11 levels. Therefore, the District concludes that PG&E's project does not increase emissions by any amount and thus will not contribute to any significant cumulative impacts on the environment.

### **3.5 MITIGATION**

The project will not have a significant impact on the environment. Therefore, no mitigation measures are required.

**TABLE 3-1  
CRITERIA AIR POLLUTANT STANDARDS, EFFECTS, AND SOURCES**

<b>Pollutant</b>	<b>Averaging Time</b>	<b>State Standard</b>	<b>National Standard</b>	<b>Pollutant Health and Atmospheric Effects</b>	<b>Major Pollutant Sources</b>
Ozone (O3)	1 hour 8 hours	0.09 ppm ---	0.12 ppm 0.08 ppm	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases (ROG) and nitrogen oxides (NO <sub>x</sub> ) react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
Carbon Monoxide (CO)	1 hour 8 hours	20 ppm 9.0 ppm	35 ppm 9 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
Nitrogen Dioxide (NO <sub>2</sub> )	1 hour Annual Avg.	0.25 ppm	--- 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
Sulfur Dioxide (SO <sub>2</sub> )	1 hour 3 hours 24 hours Annual Avg.	0.25 ppm --- 0.04 ppm ---	--- 0.5 ppm 0.14 ppm 0.03 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
Respirable Particulate Matter (PM-10)	24 hours Annual Avg.	50 ug/m <sup>3</sup> 30 ug/m <sup>3</sup>	150 ug/m <sup>3</sup> 50 ug/m <sup>3</sup>	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e. g. wind-raised dust and ocean sprays).
Fine Particulate Matter (PM-2.5)	24 hours Annual Avg.	--- ---	65 ug/m <sup>3</sup> 15 ug/m <sup>3</sup>	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NO <sub>x</sub> , sulfur oxides, and organics.
Lead	Monthly Quarterly	1.5 ug/m <sup>3</sup> ---	--- 1.5 ug/m <sup>3</sup>	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.

NOTE: ppm = parts per million; ug/m<sup>3</sup> = micrograms per cubic meter.

SOURCES: South Coast Air Quality Management District, *1997 Air Quality Management Plan*, November 1996;  
[http:// www.arb.ca.gov/health/health.htm](http://www.arb.ca.gov/health/health.htm).

**TABLE 3-2  
ATTAINMENT STATUS OF THE BAY AREA FOR THE STATE AND  
NATIONAL AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Time	Attainment Status	
		State Standards <sup>6</sup>	National Standards <sup>7</sup>
Ozone	8-Hour	---	Unclassified <sup>8</sup>
	1-Hour	Serious Nonattainment	Severe Nonattainment
Carbon Monoxide	8-Hour	Unclassified <sup>3</sup>	Unclassified <sup>3</sup> /Attainment
	1-Hour	Unclassified <sup>3</sup>	Unclassified <sup>3</sup> /Attainment
Nitrogen Dioxide	Annual Average	---	Attainment
	1-Hour	Attainment	---
Sulfur Dioxide	Annual Average	---	Attainment
	24-Hour	Attainment	Attainment
	1-Hour	Attainment	---
Respirable Particulate Matter (PM-10)	Annual Arithmetic mean	---	Attainment
	Annual Geometric Mean	Nonattainment	---
	24-Hour	Nonattainment	Unclassified <sup>3</sup>
Fine Particulate Matter (PM-2.5) <sup>9</sup>	Annual Arithmetic mean	---	Unclassified <sup>3</sup>
	24-Hour	---	Unclassified <sup>3</sup>
Lead	Calendar Quarter	---	Attainment
	30 Day Average	Attainment	---

<sup>6</sup> California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, and PM-10 are values that are not to be exceeded.

<sup>7</sup> National standards other than for ozone and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year.

<sup>8</sup> In 1997, EPA established an 8-hour standard for ozone, and annual and 24-hour standards for very fine particulate matter (PM-2.5). As of October 2001, BAAQMD did not have sufficient monitoring data to determine the region's attainment status.

<sup>9</sup> PM2-5 standards are not yet effective or currently applicable.

SOURCE: California Air Resources Board, 2000 State and National Area Designation Maps of California; <http://www.arb.ca.gov/desig/desig.htm>.

**TABLE 3-3  
AIR QUALITY DATA SUMMARY (1998– 2002) FOR THE PROJECT AREA**

Pollutant	Standard <sup>a</sup>	Monitoring Data by Year				
		1998	1999	2000	2001	2002
<b>Ozone:</b>						
Highest 1 Hour Average (ppm) <sup>b</sup>		0.053	0.079	0.058	0.082	0.054
Days over State Standard	0.09	0	0	0	0	0
Days over National Standard	0.12	0	0	0	0	0
Highest 8 Hour Average (ppm) <sup>b</sup>		0.046	0.057	0.043	0.054	0.049
Days over National Standard	0.08	0	0	0	0	0
Year Coverage <sup>c</sup>		99	97	99	98	79
<b>Carbon Monoxide:</b>						
Highest 8 Hour Average (ppm) <sup>b</sup>		3.96	3.68	3.19	3.28	2.57
Days over State/National Standard	9.0	0	0	0	0	0
Year Coverage <sup>c</sup>		99	98	96	97	35
<b>Particulate Matter (PM-10):</b>						
Highest 24 Hour Average ( $\mu\text{g}/\text{m}^3$ ) <sup>b</sup>		<b>52.4</b>	<b>77.9</b>	<b>63.2</b>	<b>67.4</b>	<b>49.7</b>
Days over State Standard (Measured)	50	1	6	2	7	0
Days over State Standard (Calculated) <sup>d</sup>		6	36	12	36	0
Days over National Standard (Measured)	150	0	0	0	0	0
Days over National Standard (Calculated) <sup>d</sup>		0	0	0	0	0
Year Coverage <sup>c</sup>		97	100	99	98	NA
<b>Particulate Matter (PM-2.5):</b>						
Highest 24 Hour Average ( $\mu\text{g}/\text{m}^3$ ) <sup>b</sup>		NA	<b>71.2</b>	47.9	<b>76.6</b>	<b>70.2</b>
Days over National Standard	65		1	0	2	4
Year Coverage <sup>c</sup>			NA	NA	NA	NA
<b>Nitrogen Dioxide:</b>						
Highest 1 Hour Average (ppm) <sup>b</sup>		0.080	0.103	0.074	0.073	0.075
Days over State Standard	0.25	0	0	0	0	0
Year Coverage <sup>c</sup>		99	97	99	97	39

a Generally, state standards are not to be exceeded and national standards are not to be exceeded more than once per year.

b ppm = parts per million;  $\mu\text{g}/\text{m}^3$  = micrograms per cubic meter.

c Year coverage indicates how extensive monitoring was during the time of year when high pollutant concentrations are expected. Year Coverage values range from 0 to 100, with a Year Coverage of 100 indicating that monitoring occurred 100% of the time when high pollutant concentrations are expected. "NP" indicates that no Year Coverage value was provided.

d Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day.

NOTE: Values in **bold** are in excess of an applicable standard. NA indicates "Not Available."

SOURCE: California Air Resources Board, *Summaries of Air Quality Data*, 1998, 1999, 2000, 2001, 2002; <http://www.arb.ca.gov/adam>.

## **CHAPTER 4**

### **ALTERNATIVES**

This project will not have a significant impact on the environment. Therefore, there is no CEQA requirement for consideration of alternatives to further reduce impacts. Nonetheless, BAAQMD presents the following discussion of alternatives to provide a fuller environmental context for assessing the project.

The alternatives discussed in an EIR must attain most of the basic objectives of the proposed project. As described in Section 2, "Project Description," the objective of PG&E's ACP is to comply with the NO<sub>x</sub> emissions limits of BAAQMD Rule 9-11. In this case, evaluation of alternatives is limited to those that would allow PG&E to comply with Rule 9-11. Alternatives that would result in a violation of Rule 9-11 do not attain the project's primary objective and, therefore, are not appropriate for consideration.

#### **4.1 IDENTIFICATION OF ALTERNATIVES**

There are two – and only two – alternatives to implementing the ACP that would allow PG&E to comply with the NO<sub>x</sub> emissions standards of Rule 9-11. The first alternative would be to comply with Rule 9-11 by curtailing operations at the Hunters Point facility. The second alternative would be to comply with Rule 9-11 by installing BARCT-level emissions control devices at the Hunters Point Power Plant facility.

#### **4.2 DISCUSSION OF ALTERNATIVE NO. 1 – CURTAILMENT OF OPERATIONS ("NO PROJECT ALTERNATIVE")**

Under this alternative, PG&E would curtail the operation of Boiler No. 7 at the Hunters Point Power Plant in order to comply with Rule 9-11.

Absent IERCs or the installation of further emissions controls, PG&E estimates that (1) it could not consistently attain the 0.037 lbs/MMBTU emissions limit in 2004 and would therefore need to curtail operation of Boiler No. 7 to comply with Rule 9-11 and (2) it could not attain the 2005 emissions limit – 0.018 lbs/MMBTU – at all and would therefore need to permanently shut down the Boiler.

PG&E operates the Hunters Point facility under a Reliability Must Run (RMR) contract with the California Independent System Operator (ISO). The ISO operates California's wholesale power grid and ensures that the electric needs of all customers are met. Under the RMR contract, the ISO requires the Hunters Point Power Plant facility to produce power as needed to maintain the reliability of the electric system in the Bay Area. Hence, the curtailment and eventual shutdown of Boiler No. 7 – as would be necessitated by this alternative – would violate the RMR contract and likely lead to power outages. Because curtailment of energy generation at the Hunters Point Power Plant facility would cause a violation of the RMR contract, this alternative is not legally feasible and need not be considered further.

#### **4.3 DISCUSSION OF ALTERNATIVE NO. 2 – INSTALLATION OF FURTHER EMISSIONS CONTROLS ON AFFECTED BOILER**

Under this alternative, PG&E would install emissions controls on Boiler No. 7 in order to comply with Rule 9-11. The only available control system to achieve that result is selective catalytic reduction (SCR).

Planning, purchasing and installing SCR would take approximately 24 months in the best case scenario. Hence, as this EIR is being prepared in the last half of 2003, SCR does not afford a feasible means of complying with Rule 9-11 in 2004 and most or all of 2005. Therefore, this alternative is infeasible and need not be considered further.

Moreover, the installation of SCR would likely require the Hunters Point facility to operate for several more years, as rate regulators (the ISO and CPUC) would likely require that the SCR cost – estimated at about \$14 million – to be amortized over a significant period of time. PG&E has repeatedly and publicly stated its commitment to shut down permanently the Hunters Point facility as soon as the ISO allows its closure. PG&E anticipates that it will only need to operate the Hunters Point facility for about two more years. The proposed ACP offers the flexibility to achieve permanent closure as soon as approval is granted. Thus, SCR would actually increase aggregate emissions by lengthening the life of the Hunters Point facility by several years.

Further, the installation and operation of the SCR system would require substantial amounts of liquid ammonia to be first transported through the neighborhoods adjacent to the Hunters Point facility and then stored onsite. The transportation and storage of this hazardous material would pose additional environmental risks.

#### **4.4 CONCLUSION**

As set forth in Chapter 3 of this EIR, BAAQMD determined that PG&E's project would not have a significant impact on the environment. In such cases, CEQA does not require the evaluation of alternatives to reduce impacts further. Nonetheless, BAAQMD has discussed two alternatives to the proposed ACP that would allow for compliance with Rule 9-11. The first alternative – curtailing operations – is not feasible because it would require violation of the RMR contract ensuring power system reliability. The second alternative – installing SCR – is also infeasible (due to the time needed to implement it) and, in any event, would expand the life of the Hunters Point Power Plant, may result in greater aggregate emissions and would likely result in additional environmental impacts due to construction and operational aspects of available control technologies. Therefore, BAAQMD determines that PG&E's proposed ACP is the environmentally superior alternative.