

**BEFORE THE ENVIRONMENTAL APPEALS BOARD  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C.**

In the matter of	)	
	)	PSD Appeal No. 08-08
Humboldt Bay Repowering Project	)	
_____	)	

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY’S  
REPLY BRIEF IN SUPPORT OF SUMMARY DISPOSITION**

**INTRODUCTION**

On November 25, 2008, the Environmental Appeals Board (EAB”) issued an Order requiring the United States Environmental Protection Agency, Region 9 (“EPA”), to file a Reply Brief addressing Mr. Simpson’s assertion that the Prevention of Significant Deterioration (“PSD”) Permit issued by the North Coast Unified Air Pollution Control District (“District”) on April 14, 2008, is a “modification” of a PSD Permit EPA issued in 1977. Order Requiring Reply, PSD 08-08, at 3 (EAB Nov. 25, 2008). Specifically, Mr. Simpson states: “This project is a modification of ‘PG&E Buhne Point (NC 77-05)’ for which [EPA retained permitting authority]”. Response to Request for Summary Dismissal, PSD Appeal No. 08-08, at 1.

EPA disagrees with Mr. Simpson’s assertion. The Humboldt Bay Repowering Project (“HBRP”) does not modify the terms and conditions in

the PSD Permit issued (and subsequently modified) by EPA. Based on this determination, EPA also disagrees with Mr. Simpson's assertions that we have retained federal PSD permitting jurisdiction for the HBRP project.

### **BACKGROUND FACTS**

From approximately 1953 until 1977, the Humboldt Bay Power Plant ("Power Plant") consisted of two boilers (52 and 53 MW) and a 63 MW nuclear unit. See Exhibit 2 to Declaration of Gerardo Rios ("Rios Declaration"). On February 18, 1977, EPA informed PG&E that installation of two mobile turbines would require, in addition to any permits issued by the District, EPA's approval pursuant to 40 C.F.R. 52.233(g). See Exhibit 1 to Rios Declaration. On March 18, 1977, PG&E submitted an application to EPA for a PSD permit allowing installation of "two mobile gas turbine generators at PG&E's Humboldt Bay Power Plant near Eureka, California." Exhibit 2, at p. 1, to Rios Declaration. PG&E's March 1977 application described the two units as trailer mounted, 15 MW gas fired turbines to provide additional power for peaking, backup or emergency use. Exhibit 2, at p 2-3. EPA issued PSD Permit, NSR 4-4-1, NC 77-05, on about June 10, 1977. See Exhibit 3 to Rios Declaration.

On September 11, 1978, PG&E requested that Region 9 modify the PSD Permit for the two mobile turbines to increase the annual hours of

operation from 613 to 2000 hours. See Exhibit 4 to Rios Declaration.

PG&E submitted an additional application on January 1, 1979, to allow the two mobile turbines to burn a certain amount of fuel oil. See Exhibit 5 to Rios Declaration. On February 23, 1979, following public notice and comment, EPA issued a modified PSD Permit to PG&E with the permit conditions for the two mobile turbines modified as requested in the applications. See Exhibit 3 to PG&E Notice of Clarification and Motion to Strike. On December 11, 1981, EPA granted a further modification to the permit for the two mobile turbines, allowing PG&E to increase the NO<sub>x</sub> emissions limit and decrease the annual hours of operation. See Exhibit 6 to Rios Declaration. On April 20, 2000, EPA agreed with a further modification of the PSD permit for the two mobile turbines to decrease the frequency of source testing. See Exhibit 3 to PG&E Notice of Clarification and Motion to Strike. Then, on October 30, 2000, EPA again modified the PSD Permit for the two mobile turbines so that PG&E could combine the limits on hours of operation for the two mobile turbines. *Id.*

In 2007, when PG&E decided to replace the entire Power Plant by undertaking the HBRP, EPA did not consider the project to be a modification of the PSD Permit we issued and modified for the two mobile turbines. Rios Declaration at ¶6. From 2007 until the present, EPA has

been actively involved in an oversight role in reviewing the HBRP permits, participating in both the California Energy Commission and District proceedings on permitting the HBRP. Id. In addition, EPA was aware that PG&E would be removing the two mobile turbines when HBRP commences operation. Rios Declaration at ¶7. We do not consider removal of the two mobile turbines to constitute a modification, nor do we consider the inclusion of a condition to eliminate the two mobile turbines to constitute a modification of the PSD Permit for which we retained jurisdiction. Rios Declaration at ¶¶6-7.

## **ARGUMENT**

### **EPA Has Only Retained Jurisdiction for Modifications of the PSD Permit We Issued Covering the Two Mobile Turbines.**

EPA proposed to approve the PSD program for the District into the California State Implementation Plan (“SIP”) on June 21, 1983. 48 Fed. Reg. 28,290 (June 21, 1983). The District subsequently revised its PSD rules to respond to limited issues raised in our proposed approval. We finalized our approval of the PSD rules into the SIP in 1985. 50 Fed. Reg. 30,941 (July 31, 1985). Our final action stated that we were rescinding the federal PSD rules applicable to this portion of the SIP “except for (a) major cogeneration sources and modification [sic] which would cause increment violations, (b) sources subject to stack height credit restrictions, (c) sources

of [sic] Indian lands, and (d) *a source for which EPA has issued PSD permits.*” (emphasis added). Id. at 30,943.

We codified the approval of the District’s PSD rules into the SIP at 40 C.F.R. 52.270. In that regulation, we approved the PSD rules into the SIP for four California air quality management districts: Sacramento County, North Coast Unified, Mendocino County, and Northern Sonoma County. We included the same general retention of authority over previously issued federal PSD permits in each of the approvals. See 40 C.F.R. 52.270(b)(1) – (4) (e.g., excepting from the PSD approval “[s]ources for which EPA has issued permits under §52.21, including the following permits and any others for which applications are received by July 31, 1985.”). For the District, we listed a total of three permits that we had issued under our federal PSD authority, including Arcata Lumber Company, Northcoast Paving and PG&E Buhne Point. Id. 52.2170(b)(2)(iii); Rios Declaration at ¶4.

Although the Region 9 staff who worked on these SIP approvals are no longer with the Agency, we believe the purpose for retaining authority over sources for which EPA had issued federal PSD permits was to promote administrative convenience and to allow the districts some time to develop permitting expertise. See Rios Declaration ¶¶4-5. Our typical practice with respect to these PSD permits has been to interpret our retention of authority

narrowly so that it applies only to the particular equipment covered by the federal PSD permit (e.g. the two mobile turbines in this instance) and not the entire facility at which the equipment is located. Rios Declaration ¶5.

We followed that practice with respect to this Power Plant. For any matters affecting the two mobile turbines subject to the federally issued PSD permit, Region 9 has processed permit modifications. Rios Declaration at ¶2; Exhibits 2 – 6 and Exhibit 3 to PG&E Notice of Clarification and Motion to Strike. However, when PG&E notified EPA that it would be rebuilding the entire Power Plant and eliminating the two mobile turbines upon commencing operation, Region 9 was only involved through our oversight role in which we provide comments on permits being issued under a SIP approved PSD program. Rios Declaration ¶6. We did not intend to retain federal PSD permitting authority over the facility as a whole or over any equipment that was not specifically covered by the PSD permit we had issued in 1977 and subsequently amended. Rios Declaration ¶6.

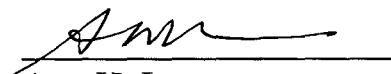
Region 9 continues to support the District's Motion for Summary Dismissal because the District properly issued the PSD Permit for HBRP pursuant to its SIP approved rules.

## CONCLUSION

For the reasons set forth above, EPA respectfully requests this Board to grant the District's and PGE's motions for summary disposition and to dismiss the Petition as it relates to the Humboldt Bay Repowering Project.

Date: December 4, 2008

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'Ann', is written over a horizontal line.

Ann H. Lyons  
Assistant Regional Counsel  
U.S.E.P.A., Region 9

**BEFORE THE ENVIRONMENTAL APPEALS BOARD  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C.**

In the matter of	)	
	)	PSD Appeal No. 08-08
Humboldt Bay Repowering Project	)	
<hr/>	)	

**DECLARATION OF GERARDO RIOS IN SUPPORT OF MOTION  
FOR SUMMARY DISMISSAL**

I, Gerardo C. Rios, declare as follows:

1. I have been the Chief of the Permits Office in the Air Division at the United States Environmental Protection Agency for Region 9 since August of 2000. The following facts are based on my personal knowledge, except for those matters stated as being based on information and belief. For those items stated as being based upon information and belief, I have relied upon information in Region 9 files and also on information reasonably relied on by professionals in my field to inform our professional judgment and opinion. As to those matters I am informed and believe them to be true as expressly stated herein, and if called to testify I could and would competently testify thereto.
2. Since I became Chief of the Permits Office in 2000, I have directly and actively participated in the modifications to the 1977 PSD Permit



that Region 9 issued to allow installation of two mobile turbines at the existing Humboldt Bay Power Plant, PSD Permit No. NSR 4-4-1, NC 77-05. Based on information and belief, Region 9 issued the PSD Permit for installation of the two mobile turbines in 1977 because the North Coast Unified Air Quality Management District ("District") did not have PSD rules that had been approved into that portion of the State Implementation Plan for California ("SIP").

3. Exhibits 1 – 6 attached to this Declaration are true and correct copies of documents in the Region 9 file on PSD Permit No. NSR 4-4-1, NC 77-05. The PSD Permit application documents are partial and contain only those parts relevant to the issues in the matter.
4. Based on information and belief, Region 9 approved PSD rules into the SIP for the District in 1985. Region 9, however, retained authority to modify PSD Permit NSR 4-4-1, NC 77-05, as well as two other PSD permits we had issued for the District prior to approving the District's PSD rules in 1985: Arcata Lumber (NC 78-01) and Northcoast Paving (NC 79-03). These permits covered specific pieces of equipment, not the entire facility. In approving the PSD rules for Sacramento County Air Pollution Control District, Region 9 also

retained permitting authority for a PSD permit we issued to Proctor and Gamble for the installation of a gas turbine (SAC 83-01).


5. Region 9 has interpreted our retention of authority narrowly for modifications of PSD permits that we issued prior to approving local PSD rules into the SIP. We have exercised the retained authority only to consider modifications to the particular equipment subject to the PSD Permit we issued, and not to retain authority for the entire facility.
6. In 2007, I was aware that PG&E submitted applications to the California Energy Commission and the District for permits, including a permit issued under the District's SIP-approved PSD rules, to replace the entire power plant with new equipment. The applications did not include any physical or operational changes to the two mobile turbines covered by PSD Permit NSR 4-4-1, NC 77-05. I did not and do not consider the power plant replacement project to be a modification of PSD Permit NSR 4-4-1, NC 77-05. PG&E's applications for the replacement project did not rely on any netting credits or in any other way depend on PSD Permit NSR 4-4-1, NC 77-05. It was and remains my professional judgment that the PG&E

project to replace the entire power plant was appropriately permitted by the District according to its SIP-approved PSD rules.

7. I was and remain aware that the two mobile turbines will be removed and decommissioned when the power plant replacement project is completed, and that the District's permit for the power plant replacement project contained a condition to ensure the two mobile turbines would be removed. I did not and do not consider that condition to constitute a modification of PSD Permit NSR 4-4-1, NSR 77-05.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on December 4, 2008 at San Francisco, California.

By:   
Gerardo C. Rios  
Chief Permits Office  
Air Division, Region 9  
U.S.E.P.A.

**ENVIRONMENTAL PROTECTION AGENCY**

Environmental Protection Agency  
Region IX  
100 California Street  
San Francisco, California 94111

In reply E-4-3  
refer to: NSR 4-4-1

Pacific Gas and Electric Company  
ATTN: Elmer E. Hall  
77 Beale Street  
San Francisco, CA 94106

FEB 18 1977

Gentlemen:

This letter is to confirm the conversation of Mr. John Stadig of my staff with your Mr. W. G. Brown. It has recently come to our attention that the Pacific Gas and Electric Company is planning to install two gas turbine generators in Eureka, Humboldt County, California. Each of these units will use diesel oil as fuel.

We would like to take this opportunity to inform you of the EPA New Source Review regulations (40 CFR 52.233(g), see enclosure) a Federally promulgated portion of the California State Implementation Plan. These regulations, which are, as of May 14, 1973, in effect in Humboldt County, state that "No owner or operator shall commence construction or modification of any new source...without first obtaining approval from the Administrator of the location of such source."

We have also enclosed the following documents for your information:

- 1) New Source Review Regulatory Background
- 2) New Source Review Application Requirements
- 3) New Source Review Procedures and Time Requirements

Please be advised that installation of the generators without the prior approval of the Administrator would be a violation of CFR 52.233(g) and could result in enforcement action pursuant to Section 113 of the Clean Air Act (42 U.S.C. 1857 et seq.).

CONCURRENCES					
SYMBOL	YES	E-4-3	AP	TZS for RLO	Com Ctr
SURNAME	STADIG	Kastow	Stung	Stung	BR
DATE	2/15/77	2-14-77	2/16/77	2/17/77	2-18-77

FORM 1320-1

OFFICIAL FILE COPY

EXHIBIT 1

- 2 -

If any questions arise, please do not hesitate to contact  
Mr. Lloyd Kostow of this office at (415) 556-0243.

Sincerely,

ORIGINAL SIGNED BY:

TERRY L. STUMPH

R. L. O'Connell

Director, Enforcement Division

cc: Humboldt County Air Pollution Control District  
Attn: C. P. Sassenrath

California Air Resources Board, Sacramento  
Attn: Harmon Wong-Woo

bc: Jerry Stumph

JStadig/mb  
02/07/77

EELB 16 3 10 1977  
CONCURRENCES

SYMBOL								
SURNAME								
DATE								

# PACIFIC GAS AND ELECTRIC COMPANY

PG&E



77 BEALE STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587

ELMER E. HALL  
CHIEF SITING ENGINEER

March 18, 1977

Mr. R. L. O'Connell  
Director, Enforcement Division  
United States Environmental  
Protection Agency  
Region IX  
100 California Street  
San Francisco, California 94111

Dear Mr. O'Connell:

Attached is an application for New Source Review Approval as described in your letter dated February 18, 1977.

The project consists of the installation of two mobile gas turbine generators at PGandE's Humboldt Bay Power Plant near Eureka, California.

We anticipate moving the gas turbines between Humboldt Bay and San Francisco Bay area sites from time to time as they are needed for maintaining the reliability of power supply in those particular areas. We will contact your office and obtain necessary permit approvals if additional sites are identified.

If you have any questions or need more information, please call Mr. L. B. Brown (781-4211, extension 4152) of this office.

Sincerely,

Attachment

EXHIBIT 2

EPA APPLICATION  
MOBILE GAS TURBINES  
HUMBOLDT BAY POWER PLANT

Applicant Information

Pacific Gas and Electric Company  
77 Beale Street  
San Francisco, CA 94106  
Attention: Elmer E. Hall

Project Location

The project site is PGandE's Humboldt Bay Power Plant located at Buhne Point near King Salmon, about four miles south of Eureka, California. It is further described as being in Section 8, T4N, R1W, Humboldt Base and Meridian (See attached map and site plans).

The site is located within the North Coast Intrastate Air Quality Control Region and the Humboldt County Air Pollution Control District.

The project site is vacant land located near, but outside, the power plant security perimeter fencing. It is near the power plant switchyard. During the construction of the plant, this site was used as a parking lot.

Existing facilities at the power plant include:

1. Unit 1 -- a 52-megawatt generating unit burning gas or oil.
2. Unit 2 -- a 53-megawatt generating unit burning gas or oil.
3. Unit 3 -- a 63-megawatt nuclear generating unit.
4. Associated fuel oil tanks and switching facilities.

Project Description

The project consists of the installation of two trailer-mounted power plant units. Each unit consists of a gas turbine-powered electric generator, designated "MFT4 Mobile Power Pac".

The units are manufactured by Pratt & Whitney Aircraft (Turbo Power and Marine Systems). Each has a maximum rated capacity of 17,000 kva (nominal rating is 15,000 kilowatts).

An existing 2000-barrel tank will be used for fuel storage. Two 10,000-gallon day tanks will be provided. The tank area will be surrounded by a berm to contain spillage. The fuel will be #2 diesel. Sulfur content of the fuel will be limited to 0.3 percent (see Appendix 1). Hydrocarbon emissions from the new tanks are expected to be negligible.

The purpose of this project is to provide additional electrical generating capacity at the Humboldt Bay Power Plant.

The gas turbines will be used:

- . To generate power to meet the area's needs when the transmission circuits cannot deliver adequate power from other sources. This could be caused by a transmission circuit failure or by a breakdown of one of the existing units at a time when the demand for power in the area is high. This use is especially important while the nuclear generating unit at Humboldt Bay Power Plant is temporarily out of service for refueling and modification.
- . To provide a portion of the system's spinning reserve capacity.
- . To provide peaking power when the system demand for power is high and there are no other more economical resources available.
- . To provide emergency power when more efficient units break down. This should occur infrequently.

They would typically be operated for from one to three hours daily, Monday through Friday. Annually, they would be expected to operate the equivalent of less than nine percent of the time at full load. *600 hr* *13 hours* *7%*

The manufacturer's emissions data for these units is summarized in Table I. Their data sheet dated February 3, 1977 is provided in Appendix 2.

#### Mitigating Factors

The units have been modified by the installation of smoke-reducing combustion chambers. This has reduced the emissions of particulate matter from about 30 pounds per hour to about 10 pounds per hour. Stack opacity has improved from Ringelmann #1.5 to #0.7.



Table I  
(See attached sketch)

Ambient Temperature	59°F	80°F
GT exhaust flow	241 #/sec	238 #/sec
GT exhaust temperature	690°F	732°F
Secondary air flow	38 #/sec	37.8 #/sec
Secondary air temperature	119°F	140°F
Circulated ave. stack flow	279 #/sec	276 #/sec
Circulated ave. stack temp.	615°F	655°F
Estimated Emissions (pounds per hour per unit)		
NOx as NO <sub>2</sub>	124	121
Sulfur as SO <sub>2</sub>	63	64
CO	26	26
Hydrocarbons	5.3	5.2
Particulate matter	10	10
Unit exit velocity	180.7 ft/sec	185.4 ft/sec
Unit exit dia.		7.3 ft.
Unit stack height		14.5 ft.

# PACIFIC GAS AND ELECTRIC COMPANY

PG&E



77 BEALE STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587

ELMER E. HALL  
CHIEF SITING ENGINEER

June 23, 1977

Mr. R. L. O'Connell, Director  
Enforcement Division (Attn. E-3)  
EPA Region IX  
100 California Street  
San Francisco, California 94111

Re: E-4-3  
NSR 4-4-1

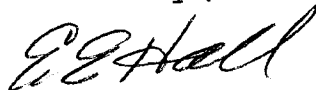
Dear Mr. O'Connell:

On June 10, 1977 we received the Approval to Construct/  
Modify permit for the mobile gas turbine generator  
installation at Humboldt Bay Power Plant near Eureka,  
California.

The gas turbine units were made available for system  
service on that date.

Commencing on that date, we are keeping a log of the  
hours that these units are operated.

Sincerely,



cc: Chief, Stationary Source Control Division  
California Air Resources Board  
P. O. Box 2815  
Sacramento, California 95814

Humboldt County Air Pollution Control District  
5600 South Broadway  
Eureka, California 95501

Attention: Charles Sassenrath

EXHIBIT 3

# PACIFIC GAS AND ELECTRIC COMPANY

PG&E

77 BEALE STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587

ELMER E. HALL  
CHIEF SITING ENGINEER

September 11, 1978

*HP  
10-10-78*

Mr. C. B. Eller  
Director, Enforcement Division  
United States Environmental  
Protection Agency  
Region IX  
215 Fremont Street  
San Francisco, California 94105

Dear Mr. Eller:

Humboldt Bay Power Plant  
Mobile Gas Turbines  
File Number: E-4-3 NC-77-05

PGandE requests modification of the gas turbines' New Source Review permit to allow extended hours of operation. The present permit was issued by your office on June 10, 1977. PGandE's air quality impact analysis (Attachment I), dispersion model description (Attachment II), and updated air quality data (Attachment III) in support of the proposed permit modification are included for addition to the previously approved application.

The existing EPA permit allows each turbine to operate for 613 hours per year. At the time that permit was issued, it appeared that those hours would be sufficient to meet the area's power generation needs. However, the return of Humboldt Unit 3 to operation has been delayed pending resolution of geologic and seismic issues at Humboldt Bay Power Plant. The earliest date that Unit 3 could be expected to return to service is June 30, 1979.

In the meantime, the possibility of emergency conditions that could require more than 613 hours of gas turbine use prompt this request for permit modification. PGandE anticipates that each turbine would operate not more than the equivalent of 2,000 hours per year at full load.

PGandE understands that this permit modification does not subject the gas turbines to a Prevention of Significant

EXHIBIT 4

Mr. C. B. Eller

-2-

September 11, 1978

Deterioration review. Please call Mr. J. P. Wagner of my staff at 781-4211, extension 2710, with any questions you may have.

Sincerely,



cc Mr. Charles Sassenrath  
Humboldt County Air  
Pollution Control District  
5600 South Broadway  
Eureka, California 95501

Mr. Harmon Wong-Woo  
Chief, Stationary Source  
Control Division  
California Air Resources Board  
P.O. Box 2815  
Sacramento, California 95814

Attachments

# ATTACHMENT I

## Impact Analysis

A New Source Review impact analysis was performed for pollutants emitted in excess of 100 tons per year. Estimated turbine emissions are shown in Table 1.

Table 1

### Estimated Gas Turbine Emissions

<u>Pollutant</u>	<u>Pounds/ Hour/Unit</u>	<u>Tons/ Year/Unit (a)</u>
NO <sub>x</sub> as NO <sub>2</sub>	124	124
SO <sub>x</sub> as SO <sub>2</sub>	64	64 — 0.365
Carbon Monoxide	26	26
Hydrocarbons	5.3	5.3
Particulate Matter	10	10

(a)

Based on 2,000 hours of annual operation.

The dispersion analysis for SO<sub>2</sub> and NO<sub>2</sub> impacts was performed using 1967 Meteorological data gathered at the Humboldt Bay Power Plant. Calm winds were distributed based on the frequency of occurrence of winds between 1 and 6 miles per hour. Model receptor sites were located on 22.5° centerlines at distances of 0.5, 1.0, 2.5, 5.0, and 10.0 miles. Gas turbine data used were:

Total SO <sub>x</sub> as SO <sub>2</sub> emissions	15876 mg/sec
Total NO <sub>x</sub> as NO <sub>2</sub> emissions	31241 mg/sec
Average stack temperature	597° K
Exit velocity	55.1 mps
Exit radius	1.11 m
Stack height	4.42 m

Table 2 lists the applicable standards and the maximum calculated concentrations of SO<sub>2</sub> and NO<sub>2</sub>. Figures 1-5 show isopleths of pollutant concentrations. Maximum concentrations for NO<sub>2</sub> were derived from the ambient concentrations of SO<sub>2</sub>. This was done by multiplying the ambient SO<sub>2</sub> concentrations by 1.968, the ratio of the NO<sub>2</sub> to SO<sub>2</sub> emission rate. The maximum 3-hour SO<sub>2</sub> concentration was calculated from the 1, 8, and 24 hour concentrations using the Larson method.

Table 2

HUMBOLDT MOBILE GAS TURBINES  
MAXIMUM AMBIENT CONCENTRATIONS (a)

Pollutant	Averaging Period	Ambient Standard (ug/m <sup>3</sup> )	Maximum Calculated Concentration (ug/m <sup>3</sup> ) (b)		
SO <sub>2</sub>	1 hour (state)	1310	23.1	PSD class II	PSD class I
	3 hour (fed)	1300	13.6	512	25
	24 hour (state)	130	5.1	91	5
	Annual (fed)	80	1.3 (c)	20	2
NO <sub>2</sub>	1 hour (state)	470	45.5		
	Annual (fed)	100	2.6 (c)		

(a)

Assumed 100% conversion from NO<sub>x</sub> to NO<sub>2</sub>. Actual conversion percentages are substantially lower.

(b)

Location in all cases is 1.6 km, 180°.

(c)

Based on 8760 hours of use at full load.

RECEIVED  
E.P.A. REGION IX

# PACIFIC GAS AND ELECTRIC COMPANY

PG&E

77 BEALE STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587

ELMER E. HALL  
CHIEF SITING ENGINEER

January 1, 1979

Mr. C. B. Eller  
Director, Enforcement Division  
United States Environmental  
Protection Agency  
Region IX  
215 Fremont Street  
San Francisco, CA 94105

Dear Mr. Eller:

Humboldt Bay Power Plant  
Mobile Gas Turbines  
File Number: E-4-3 NC-77-05

Pacific Gas and Electric Company requests that the September 11, 1978 application for modification of the gas turbines' existing New Source Review permit be amended to include the attached information. The attachments indicate the turbines' impacts when they are burning 0.5 percent sulfur fuel.

PG&E believes it necessary to maintain a flexible fuel supply for the turbines. Therefore, we cannot limit the sulfur content of the turbines' fuel to the 0.3 percent submitted in the September 11, 1978 application. A limit of 0.5 percent sulfur would allow for more fuel variability and ensure that an adequate quantity of fuel could be made

EXHIBIT 5

Mr. C. B. Eller

- 2 -

January 1, 1979

available. Please call Mr. J. P. Wagner of my staff at (415) 781-4211, extension 2710, with any questions you may have.

Sincerely,



cc: Mr. Charles Sassenrath  
Humboldt County Air  
Pollution Control District  
5600 South Broadway  
Eureka, California 95501

Mr. Harmon Wong-Woo  
Chief, Stationary Source  
Control Division  
California Air Resources Board  
P. O. Box 2815  
Sacramento, California 95814



## ATTACHMENT I

### Impact Analysis

A New Source Review impact analysis was performed for pollutants emitted in excess of 100 tons per year. Estimated turbine emissions are shown in Table 1.

Table 1

#### Estimated Gas Turbine Emissions

<u>Pollutant</u>	<u>Pounds/ Hour/Unit</u>	<u>Tons/ Year/Unit (a)</u>
NO <sub>x</sub> as NO <sub>2</sub>	124	124
SO <sub>x</sub> as SO <sub>2</sub>	107	107
Carbon Monoxide	26	26
Hydrocarbons	5.3	5.3
Particulate Matter	10	10

(a) Based on 2,000 hours of annual operation.

The dispersion analysis for SO<sub>2</sub> and NO<sub>2</sub> impacts was performed using 1967 Meteorological data gathered at the Humboldt Bay Power Plant. Calm winds were distributed based on the frequency of occurrence of winds between 1 and 6 miles per hour. Model receptor sites were located on 22.5° centerlines at distances of 0.5, 1.0, 2.5, 5.0, and 10.0 miles. Gas turbine data used were:

Total SO <sub>x</sub> as SO <sub>2</sub> emissions	26,460 mg/sec
Total NO <sub>x</sub> as NO <sub>2</sub> emissions	31,241 mg/sec
Average stack temperature	597° K
Exit velocity	55.1 mps
Exit radius	1.11 m
Stack height	4.42 m

Table 2 lists the applicable standards and the maximum calculated concentrations of SO<sub>2</sub> and NO<sub>2</sub>. Figures 1-5 show isopleths of pollutant concentrations. Maximum concentrations for NO<sub>2</sub> were derived from the ambient concentrations of SO<sub>2</sub>. This was done by multiplying the ambient SO<sub>2</sub> concentrations by 1.181, the ratio of the NO<sub>2</sub> to SO<sub>2</sub> emission rate. The maximum 3-hour SO<sub>2</sub> concentration was calculated from the 1, 8, and 24 hour concentrations using the Larson method.

Table 2

HUMBOLDT MOBILE GAS TURBINES<sup>(a)</sup>  
MAXIMUM AMBIENT CONCENTRATIONS

<u>Pollutant</u>	<u>Averaging Period</u>	<u>Ambient Standard (ug/m<sup>3</sup>)</u>	<u>Maximum Calculated Concentration (ug/m<sup>3</sup>) (b)</u>
SO <sub>2</sub>	1 hour(state)	1310	38.5
	3 hour(fed)	1300	22.7
	24 hour(state)	130	8.5
	Annual(fed)	80	2.2
NO <sub>2</sub>	1 hour(state)	470	45.5
	Annual(fed)	100	2.6 <sup>(c)</sup>

---

(a) Assumed 100% conversion for NO<sub>x</sub> to NO<sub>2</sub>. Actual conversion percentages are substantially lower.

(b) Location in all cases is 1.6 km, 180°.

(c) Based on 8760 hours of use at full load.

# ENVIRONMENTAL PROTECTION AGENCY

Environmental Protection Agency  
Region 1X  
215 Fremont St.  
San Francisco, CA. 94105

IN REPLY E-4-2  
REFER TO: NSR 4-4-1  
NC 77-05

Mr. E. D. Weeks  
Plant Superintendent  
Pacific Gas and Electric Company (PG&E)  
77 Beale Street  
San Francisco, CA 94106

DEC 11 1981

Dear Mr. Weeks:

This is in response to your letter dated July 22, 1981, requesting a change in the allowable NO<sub>x</sub> emission limits and hours of operation for PG&E's Humboldt Bay Power Plant Units Nos. 2 and 3. The limitations are those contained within EPA's January 10, 1979 PSD permit (NSR 4-4-1, NC 77-05) for Units Nos. 2 and 3.

Based on the information submitted by PG&E, EPA has determined that an increase in the allowable NO<sub>x</sub> emission rate for each unit from .54 to .70 lb/MMBTU, coupled with a reduction in the allowable annual hours of operation from 2000 to 1560 hours, would not result in an increase in the sources annual allowable emissions of NO<sub>x</sub>. Therefore, EPA hereby amends VII. Special Conditions B. and D. of PG&E's January 10, 1979 PSD permit (NSR 4-4-1, NC 77-05) to read as follows:

B. Each turbine will be operated for no more than 1560 hours during any 365-day period. A log will be maintained to reflect the actual hours of operation for each turbine.

## D. Emission Limits for Nitrogen Oxides

On and after the date this permit is issued the above discussed PG&E gas turbine units shall not discharge or cause the discharge into the atmosphere of any gases which contain Nitrogen Oxides in excess of .70 lb/MMBTU heat input.

EPA concurs with PG&E's analysis that the high NO<sub>x</sub> measurements at Units Nos. 1 and 2 were likely caused by the use of fuel oil with a high nitrogen content. In order to keep track of the fuel nitrogen content and the subsequent effect it has on NO<sub>x</sub> emissions, EPA is requiring that a record be kept of the nitrogen

CONCURRENCES			
SYMBOL	E42	E-4	B7
SURNAME	Kren	WAF	Call
DATE	12-8-81	12/10/81	12/10/81

EXHIBIT 6

in fuel content. Therefore, VII. Special Condition E. Nitrogen in Fuel Record Keeping is hereby added to the permit as follows:

E. Nitrogen in Fuel Record Keeping

Pacific Gas and Electric Company shall maintain a log of the nitrogen content of the diesel oil received for use as fuel oil for Units Nos. 1 and 2. Nitrogen content shall be measured using the most current ASTM method, or by methods approved by EPA, or as certified by the supplier.

All other conditions contained with PG&E's January 10, 1979 PSD permit (NSR 4-4-1, NC 77-05) shall remain in effect and unchanged.

If you have any questions regarding this matter, please contact David Solomon of our Permits Branch at (415)974-8066.

Sincerely yours,

Original Signed by:

Carl C. Kohnert, Jr.  
Acting Director  
Enforcement Division

cc: ARB  
Humboldt County APCD, Eureka

bc: E-3

812-2-81  
E-4:SOLOMON:cr:4-8066:12/2/81

## CERTIFICATE OF SERVICE

I hereby certify that on December 4, 2008, I filed the following documents by placing an original in the USEPA Pouch Mail to the Environmental Appeals Board and by filing an electronic PDF file at the Central Data Exchange.

- 1) UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REPLY IN SUPPORT MOTION FOR SUMMARY DISPOSITION and
- 2) DECLARATION OF GERARDO RIOS IN SUPPORT OF MOTION FOR SUMMARY DISMISSAL

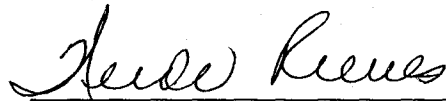
I also deposited a true and correct copy of each document listed above in the U.S Mail to:

Richard L. Martin, Jr.  
Air Pollution Control Officer, NCUAPCD  
2300 Myrtle Avenue  
Eureka, CA 95501

Rob Simpson  
27126 Grandview Avenue  
Hayward, CA 94542

David Farabee  
Pillsbury Winthrop  
50 Fremont Street  
P.O. Box 7880  
San Francisco, CA 94120-7880

I declare under the penalty of perjury that the foregoing is true and correct.



---