

**FILED**

**FEB 22 2005**

HEARING BOARD  
BAY AREA AIR QUALITY  
MANAGEMENT DISTRICT

MARY ROMAIDIS  
CLERK  
HEARING BOARD  
BAY AREA AIR QUALITY  
MANAGEMENT DISTRICT

BEFORE THE HEARING BOARD  
OF THE  
BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
STATE OF CALIFORNIA

In the Matter of the Application of	)	
	)	
SILICON VALLEY POWER – PICO	)	No. 3481
POWER PLANT, CITY OF SANTA	)	
CLARA, CALIFORNIA	)	<u>ORDER GRANTING SHORT-TERM</u>
	)	<u>VARIANCE</u>
For a Variance from Regulation 2,	)	
Rule 1, Section 307 (Permit Condition	)	
#11) and Regulation 2, Rule 2, Section 419	)	
_____	)	

The above-entitled matter is an Application for Interim and Short Term Variance from the provisions of Regulation 2, Rule 1, Section 307, (Permit Condition #11) and Regulation 2, Rule 2, Section 419 filed on November 29, 2004, and amended on December 13, 2004.

Scott A. Galati, Esq., Leslie J. Ward, and Greg Darvin appeared on behalf of Silicon Valley Power, the City of Santa Clara’s municipal utility and owner of the Pico Power Project (“Applicant”).

Adan Schwartz, Esq., appeared as Counsel for the Air Pollution Control Officer (“APCO”).

The Clerk of the Hearing Board provided notice of this hearing on the Application for Interim and Short-Term Variance in accordance with the requirements of the California Health and

*ALB*

1 Safety Code.

2 The Variance application requested Interim and Short-Term Variance relief for the period  
3 December 1, 2004 through and including February 28, 2005. Interim Variance relief was  
4 requested to February 28, 2005, until the Short-Term Variance was heard, but for no more than 90  
5 days as limited by California Health and Safety Code Section 42351. The Hearing Board heard  
6 and granted the request for Interim Variance on December 16, 2004.

7 The Hearing Board heard the request for Short-Term Variance on January 27, 2005. The  
8 Hearing Board provided the public an opportunity to testify at the hearing, as required by the  
9 California Health and Safety Code, but no one did so. The Hearing Board heard evidence and  
10 argument from the Applicant and the APCO. The APCO did not oppose the granting of the Short-  
11 Term Variance.

12 The Hearing Board took the matter under submission for decision. After consideration of  
13 the evidence, the Hearing Board voted to grant the request for Short-Term Variance, as set forth in  
14 more detail below:

15 BACKGROUND

16 Applicant is a publicly owned municipal utility. Applicant has received a license to  
17 construct and operate the Pico Power Project, a 122 MW nominally rated combined cycle power  
18 plant, by the California Energy Commission (CEC). Applicant is not considered a small business  
19 as described by California Health and Safety Code Section 42352.5(b) (2) and will, when  
20 operational, emit more than 10 tons per year of air contaminants. In granting the license, the CEC  
21 adopted the provisions contained in the Bay Area Air Quality Management District's (District)  
22 Final Determination of Compliance (FDOC). The FDOC was prepared by the District as part of  
23 its New Source Review process. The Pico Power Project was designed to provide approximately  
24 25 percent of Applicant's generation resources and will help Applicant meet its expected load  
25 growth by replacing power obtained via long term power sales agreement which expired on  
26 December 31, 2004.

1 Construction of the Pico Power Project is nearing completion and the Applicant is  
2 currently engaging in "Commissioning Activities". These activities are designed to allow  
3 operation of the various components of the project to facilitate synchronization, fine-tuning and to  
4 make adjustments prior to declaring the project "Commercially Operable". The FDOC and the  
5 CEC License include conditions applicable during Commissioning Activities. Specifically,  
6 Condition #11, which is the subject of this variance request, sets the following daily and hourly  
7 limits for emissions of oxides of nitrogen (as NO<sub>2</sub>): 358.9 pounds per calendar day, 18 pounds per  
8 hour. In addition to Condition #11, the permit limits the total amount of time the turbines can be  
9 operated during the Commissioning Period to 300 hours per each (2) turbine train.

#### 10 11 DISCUSSION

12 Applicant testified that data acquired at the start of Commissioning Activities on or about  
13 Nov. 15, 2004 indicated the Applicant was in violation of the daily and hourly limits set forth in  
14 Condition #11. After double-checking its data, the Applicant ceased Commissioning Activities  
15 and sought the Interim and Short-Term Variance relief. Applicant further testified that the NO<sub>x</sub>  
16 emission limits contained in Condition #11 were based on a manufacturer's guarantee that the  
17 turbines would operate at 25 ppm NO<sub>x</sub>. It was discovered by the Applicant during  
18 Commissioning Activities that the 25 ppm NO<sub>x</sub> guarantee was applicable only to turbine  
19 operations with water injection. Higher concentrations would occur without water injection.  
20 Applicant testified that during the initial stages of Commissioning, it discovered that during low  
21 load operations, water injection for the turbine could not be performed without risking damage to  
22 the equipment. This information was corroborated with data obtained during Commissioning  
23 Activities of the Los Esteros Power Project, which had completed Commissioning Activities after  
24 the FDOC and CEC licenses for the Pico Power Project were issued.

25  
26 Applicant proposed a Commissioning Schedule that would enable it to continue

1 Commissioning Activities with up to 120 hours of operation at emission levels above those  
2 contained in Condition #11, and proposed specific emission limits with which it would comply  
3 during that time period. The proposed schedule, which is attached to this Order, results in total  
4 excess NOx emissions of 3,360 pounds during the Commissioning Period. Maximum daily  
5 emissions of 1,224 pounds/day during this period would result in excess emissions of  
6 865.1 pounds/day above the requirements of Condition #11. District testified that the total  
7 emissions of NOx in the District are about 300 tons/day.

8  
9 Condition #11 was drafted into the permit because the District Staff, Applicant and CEC  
10 Staff all agreed that during portions of the Commissioning Activities, pollution control equipment  
11 would be inoperable, thereby rendering it impossible for the emissions to meet the stringent  
12 operational emission limits. In addition, the District Staff, Applicant, and CEC Staff all agreed  
13 that it is impossible to fully complete construction of the facility without the ability to fire the  
14 turbines and conduct fine-tuning, adjustments, repairs and further construction activities.

15  
16 Applicant testified that Silicon Valley Power has an obligation to serve its customers and  
17 that the Pico Power Plant project will provide needed additional generation capacity for the South  
18 Bay Area. Applicant further testified that it would incur substantial additional costs that would, in  
19 turn, be passed along to the rate-paying public if the Short-Term Variance were not granted.  
20 Specifically, the Applicant testified that amending its license would take months, thereby causing  
21 it to incur the cost of securing additional power supply contracts exceeding \$500,000 per month in  
22 addition to the overhead and expense of contractors, consultants and engineers associated with the  
23 delay.

24 The APCO did not oppose the Short-Term Variance and testified that Applicant's  
25 Proposed Commission Schedule was reasonable and would likely have been found adequate and  
26 incorporated in the original FDOC had it been proposed at that time.



1 proposed a schedule of operations of the Commissioning Activities that minimizes, to  
2 the extent feasible, the amount of time the turbines will be operated with emissions in  
3 excess of those allowed by Condition #11. The Commissioning Schedule that was  
4 proposed in Attachment #3 of the Application for Variance is attached to this Order.  
5 The City of Santa Clara has estimated that the excess emissions will be approximately  
6 3,360 pounds over the variance period.

- 7 6. During the period the variance is in effect, that the City of Santa Clara will monitor or  
8 otherwise quantify emission levels from the source, if requested to do so by the  
9 District, and report these emission levels to the District pursuant to a schedule  
10 established by the District. Specifically, the City of Santa Clara will monitor emissions  
11 with continuous emission monitoring equipment in accordance with the conditions of  
12 the FDOC. The City of Santa Clara will report those emissions to the Hearing Board,  
13 as directed in the Order.

14  
15 THEREFORE, THE HEARING BOARD ORDERS:

16 A Short-Term Variance from Regulation 2, Rule 2, Section 419 and Regulation 2,  
17 Rule 1, Section 307 and specifically from the Final Determination of Compliance, Condition #11  
18 is hereby granted from December 1, 2004, to and including February, 28, 2005, subject to the  
19 following conditions:

- 20 1. The remainder of the Commissioning Activities shall be conducted in accordance with  
21 the Commissioning Schedule that was proposed in Attachment #3 of the Application  
22 for Variance, and which is hereby attached to this Order. The emission limits for NOx  
23 contained in the Commissioning Schedule shall supersede the emission limits for NOx  
24 contained in FDOC Condition #11.
- 25 2. Applicant shall continue to monitor NOx and CO as required in the FDOC.
- 26 3. Applicant shall submit to the District and the Hearing Board monthly reports of NOx

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and CO emissions. Monthly reports will be due on or before the 10<sup>th</sup> day of the month for emissions occurring during the preceding month. Monthly reports will summarize CEM readings for every hour and every calendar day.

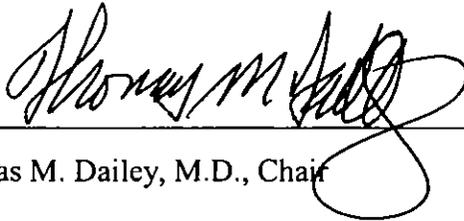
- 4. Applicant shall pay the excess emission fees pursuant to District Regulation 3, Schedule A.

Moved by: Terry A. Trumbull, Esq.

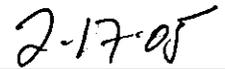
Seconded by: Allan R. Saxe, Esq.

AYES: Julio Magalhães, Ph.D; Jeffrey Raines, P.E.; Allan R. Saxe, Esq.,  
Terry A. Trumbull, Esq.; and Thomas M. Dailey, M.D.

NOES: None

  
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Thomas M. Dailey, M.D., Chair

  
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Date

## COMMISSIONING SCHEDULE

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3 **Part Load to Full Load Tests** – These tests will occur during 15 days of operation with the SCR  
4 and CO catalysts installed but not fully operational. The total testing period will be 60 hours per  
5 turbine for the part and full load tests. During this series of tests, the gas turbine water injection  
6 system will be initiated and tuned to help minimize NO<sub>x</sub> emissions but NO<sub>x</sub> concentrations could  
7 approach upwards of 100 ppm for short-periods of time. The mass emissions of NO<sub>x</sub> will be 51  
8 lb/hr with total testing time at 30 hours per turbine for a total emissions rate of 3,060 pounds. The  
9 maximum daily emissions will be 1,224 lb/day.

10  
11 Following tuning of the water injection system the SCR Ammonia injection system will be  
12 energized and tuned to minimize NO<sub>x</sub> emissions. The average NO<sub>x</sub> emission concentration for the  
13 period is assumed be 40 ppm at 15 percent oxygen (due to water injection control) or 41 lb/hr per  
14 gas turbine. Total testing for each gas turbine is estimated to last 30 hours each, for a total of 2,460  
15 pounds of NO<sub>x</sub>. The maximum daily emissions will be 984 lb/day.

16  
17 The total NO<sub>x</sub> emissions from commissioning two turbines over the 15-days of operation will be  
18 5,520 pounds.

19  
20 **Full Load Tests (SCR Fully Operational)** – These tests will occur during 15 days of operation.  
21 By the beginning of this test period the control systems will be tuned and achieving NO<sub>x</sub> and CO  
22 control at design levels. During the tests, the heat input to the gas turbine will be approximately  
23 460 MMBtu/hr or 100 percent of the maximum heat input rating. The hourly and daily emissions  
24 from this series of testing are expected to comply with existing permit limits of 18 lb/hr per  
25 turbine.

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