

**FILED**

**MAY 18 2005**

HEARING BOARD  
BAY AREA AIR QUALITY  
MANAGEMENT DISTRICT

MARY ROMAIDIS  
CLERK  
HEARING BOARD  
BAY AREA AIR QUALITY  
MANAGEMENT DISTRICT

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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 LONG-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 Long-Term Variance from the provisions of Regulation 2, Rule 1, Section 307, (Permit Condition #11) and Regulation 2, Rule 2, Section 419.

Scott A. Galati, Esq. and Leslie J. Ward 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”).

**PROCEDURAL HISTORY**

The Hearing Board has previously issued Interim and Short-Term Variance Relief to the Pico Project. The Interim Variance was granted on December 16, 2004. The Short Term Variance

1 was granted on January 27, 2005 and granted relief from Permit Condition #11 from a period  
2 commencing on December 1, 2004 through and including February 28, 2005 (Previous Order,  
3 dated February 17, 2005). Both of the variances were granted to accommodate the Applicant's  
4 completion of Commissioning Activities.

5 On February 25, 2005, the Applicant filed a Request For Extension of the Compliance  
6 Period for the Short-Term Variance. The Applicant relied on Health & Safety Code Sections  
7 42356 and 42357 for support of the authority of the Hearing Board to grant the requested  
8 extension. On March 3, 2005, the District Counsel filed an objection to the Applicant's requested  
9 form of relief and provided its legal opinion that the Sections of the Health & Safety Code relied  
10 upon by the Applicant were inapplicable. Further, District Counsel believed that the Short-Term  
11 Variance could not be extended beyond a period of 90 days. In response to District Counsel's  
12 letter and after conferring with Applicant, the Clerk of the Board set a Hearing on the matter for  
13 April 28, 2005 and further provided public notice sufficient to comply with the public notice  
14 required for a long-term variance hearing in accordance with Health & Safety Code Section 40826.

15 After discussion of the form and procedure for addressing the relief requested by the  
16 Applicant, the Applicant modified its request for extension of the Short-Term Variance to a  
17 request for a new variance commencing on February 28, 2005 through and including March 24,  
18 2005, the date the Applicant had completed all Commissioning Activities. The Hearing Board  
19 accepted the modification and proceeded to take evidence from the parties.

20 The Hearing Board heard evidence and argument from the Applicant and the APCO. The  
21 APCO did not oppose the granting of the Long-Term Variance. The Hearing Board also took  
22 administrative notice of the record in the preceding Interim Variance and Short-Term Variance  
23 hearings.

24 The Hearing Board took the matter under submission for decision. After consideration of  
25 the evidence, the Hearing Board voted to grant the request for Long-Term Variance, as set forth in  
26 more detail below. For purposes of documenting the complete record, evidence submitted in the

1 Interim Variance and Short-Term Variance hearings is also summarized below.

2 BACKGROUND

3 Applicant is a publicly owned municipal utility. Applicant has received a license to  
4 construct and operate the Pico Power Project, a 122 MW nominally rated combined cycle power  
5 plant, by the California Energy Commission (CEC). Applicant is not considered a small business  
6 as described by California Health and Safety Code Section 42352.5(b) (2) and will, when  
7 operational, emit more than 10 tons per year of air contaminants. In granting the license, the CEC  
8 adopted the provisions contained in the Bay Area Air Quality Management District's (District)  
9 Final Determination of Compliance (FDOC). The FDOC was prepared by the District as part of  
10 its New Source Review process. The Pico Power Project was designed to provide approximately  
11 25 percent of Applicant's generation resources and will help Applicant meet its expected load  
12 growth by replacing power obtained via long term power sales agreement which expired on  
13 December 31, 2004.

14 The Applicant was engaged in "Commissioning Activities" between December 1, 2004 and  
15 March 24, 2005. These activities are designed to allow operation of the various components of the  
16 project to facilitate synchronization, fine-tuning and to make adjustments prior to declaring the  
17 project "Commercially Operable". The FDOC and the CEC License include conditions applicable  
18 during Commissioning Activities. Specifically, Condition #11, which is the subject of this  
19 variance request, sets the following daily and hourly limits for emissions of oxides of nitrogen (as  
20 NO<sub>2</sub>): 358.9 pounds per calendar day, 18 pounds per hour. In addition to Condition #11, the  
21 permit limits the total amount of time the turbines can be operated during the Commissioning  
22 Period to 300 hours per each (2) turbine train.

23  
24 DISCUSSION

25 Applicant testified that data acquired at the start of Commissioning Activities on or about  
26 Nov. 15, 2004 indicated the Applicant was in violation of the daily and hourly limits set forth in

1 Condition #11. After double-checking its data, the Applicant ceased Commissioning Activities  
2 and sought the Interim and Short-Term Variance relief. Applicant further testified that the NOx  
3 emission limits contained in Condition #11 were based on a manufacturer's guarantee that the  
4 turbines would operate at 25 ppm NOx. It was discovered by the Applicant during  
5 Commissioning Activities that the 25 ppm NOx guarantee was applicable only to turbine  
6 operations with water injection. Higher concentrations would occur without water injection.  
7 Applicant testified that during the initial stages of Commissioning, it discovered that during low  
8 load operations, water injection for the turbine could not be performed without risking damage to  
9 the equipment. This information was corroborated with data obtained during Commissioning  
10 Activities of the Los Esteros Power Project, which had completed Commissioning Activities after  
11 the FDOC and CEC licenses for the Pico Power Project were issued.

12 Applicant proposed a Commissioning Schedule that would enable it to continue  
13 Commissioning Activities with up to 120 hours of operation at emission levels above those  
14 contained in Condition #11, and proposed specific emission limits with which it would comply  
15 during that time period. The proposed schedule, which is attached to this Order, results in total  
16 excess NOx emissions of 3,360 pounds during the Commissioning Period. Maximum daily  
17 emissions of 1,224 pounds/day during this period would result in excess emissions of 865.1  
18 pounds/day above the requirements of Condition #11. District testified that the total emissions of  
19 NOx in the District are about 300 tons/day.

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

26 Applicant testified that Silicon Valley Power has an obligation to serve its customers and

1 that the Pico Power Plant project will provide needed additional generation capacity for the South  
2 Bay Area. Applicant further testified that it would incur substantial additional costs that would, in  
3 turn, be passed along to the rate-paying public if the variance relief was not granted. Specifically,  
4 the Applicant testified that amending its license would take months, thereby causing it to incur the  
5 cost of securing additional power supply contracts exceeding \$500,000 per month in addition to  
6 the overhead and expense of contractors, consultants and engineers associated with the delay.

7 The APCO did not oppose the Interim, Short-Term, nor Long-Term Variance and testified  
8 that Applicant's Proposed Commission Schedule was reasonable and would likely have been  
9 found adequate and incorporated in the original FDOC had it been proposed at that time.

10 The Applicant testified that on February 3, 2005, Turbine 1 experienced bearing failures  
11 that required it to be removed from the site and shipped to Houston, Texas where the manufacturer  
12 could make the necessary repairs. During the time the turbine was being shipped and repaired,  
13 Commissioning Activities ceased. This repair caused the Applicant to become unable to complete  
14 the Commissioning Activities by the expiration of the Short-Term Variance on February 28, 2005.  
15 The Applicant further testified that the bearing failure was not anticipated and could not have been  
16 predicted.

17 As noted above, the Short-Term Variance allowed up to 120 hours during which Applicant  
18 would be allowed to comply with alternative limits rather than those in Condition #11. The Long-  
19 Term Variance effectively lengthens the time period during which the 120 hours may be used.  
20 However, Applicant has not exceeded the 120 hours and moreover, given that Commissioning  
21 Activities are completed, will not do so.

#### 22 SPECIFIC FINDINGS

23  
24 The Hearing Board hereby finds pursuant to Health and Safety Code Section 42352 the  
25 following:

- 26 1. That the City of Santa Clara will be in violation of provisions of Regulation 2, Rule 1,

1 Section 307, (Permit Condition #11) and Regulation 2, Rule 2, Section 419.

- 2 2. That, due to conditions beyond the reasonable control of the City of Santa Clara,  
3 requiring compliance would result in the practical closing and elimination of a lawful  
4 business. Specifically, the emission limits in Condition #11 were based on the  
5 manufacturer's guarantees of NOx emissions during part-load and full-load testing with  
6 water injection. Initial stages of Commissioning demonstrated that water injection for  
7 the turbine could not be performed without risking damage to the equipment. Hence,  
8 requiring compliance with Condition #11 would essentially prevent the completion of  
9 Commissioning Activities and such completion is a condition precedent to Commercial  
10 Operation of the Pico Power Project. Further, the bearing failure of Turbine #1 was  
11 beyond the reasonable control of the City of Santa Clara and such failure caused the  
12 cessation of Commissioning Activities thereby preventing completion by the expiration  
13 of the Short-Term Variance on February 28, 2005.
- 14 3. That the closing or taking would be without a corresponding benefit in reducing air  
15 contaminants. Specifically, maximum daily excess emissions of 865.1 pounds per day  
16 represent a relatively minor increase in the total daily emissions of about 300 tons/day  
17 for the District as a whole. In addition, the excess emissions will occur outside the  
18 "ozone season".
- 19 4. That the City of Santa Clara has given consideration to curtailing operations of the  
20 source in lieu of obtaining a variance. Applicant testified that curtailing operations  
21 would not permit Commissioning Activities to be completed and would, therefore,  
22 prevent the Pico Power Plant from becoming operational, thus preventing Silicon  
23 Valley Power from fulfilling its responsibility to its customers.
- 24 5. During the period the variance is in effect, the City of Santa Clara will reduce excess  
25 emissions to the maximum extent feasible. Specifically, the City of Santa Clara has  
26 proposed a schedule of operations of the Commissioning Activities that minimizes, to

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

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

13  
14 THEREFORE, THE HEARING BOARD ORDERS:

15 A Long-Term Variance from Regulation 2, Rule 2, Section 419 and Regulation 2, Rule  
16 1, Section 307 and specifically from the Final Determination of Compliance, Condition #11 is  
17 hereby granted from February 28, 2005, to and including March 24, 2005, subject to the following  
18 conditions:

- 19 1. The remainder of the Commissioning Activities shall be conducted in accordance with  
20 the Commissioning Schedule that was proposed in Attachment #3 of the Application  
21 for Variance, and which is hereby attached to this Order. The emission limits for NOx  
22 contained in the Commissioning Schedule shall supersede the emission limits for NOx  
23 contained in FDOC Condition #11.
- 24 2. Applicant shall continue to monitor NOx and CO as required in the FDOC.
- 25 3. Applicant shall submit to the District and the Hearing Board monthly reports of NOx  
26 and CO emissions. Monthly reports will be due on or before the 10<sup>th</sup> day of the month

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for emissions occurring during the preceding month. Monthly reports will summarize CEM readings for every hour and every calendar day.

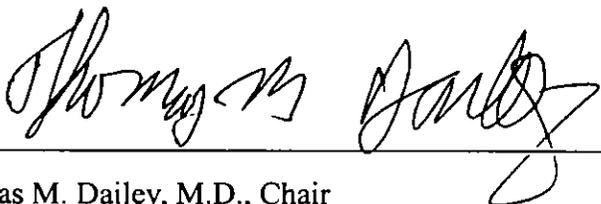
4. Applicant shall pay the excess emission fees pursuant to District Regulation 3, Schedule A.

Moved by: Terry A. Trumbull, Esq.

Seconded by: Julio Magalhães, Ph.D.

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



Thomas M. Dailey, M.D., Chair



Date

1 COMMISSIONING SCHEDULE

2  
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.