

April 15, 2020



*Powering* The Center of What's Possible

To: Director of Compliance and Enforcement  
Bay Area Air Quality Management District  
Director of Compliance and Enforcement  
375 Beale Street, Suite 600  
San Francisco, CA 94105  
Attn: Title V Reports

Subject: Title V Semi-annual Monitoring Report for City of Santa Clara, Silicon Valley Power (SVP), Donald Von Raesfeld Power Plant, BAAQMD Plant No. B4991 (S-1, 2, 3, 4)

The City of Santa Clara Electric Department, Silicon Valley Power (SVP), is submitting this semi-annual report in accordance with the Major Facility Review Permit Section I (Standard Conditions) and Clause F (Monitoring Reports). The permit requires a reporting of specific events of non-compliance. During the period **October 1, 2019** through **March 31, 2020**, SVP completed all the required monitoring. There were no instances of non-compliance during this reporting period. The attached forms provide data that details the compliance items.

I certify to the best of my knowledge based on information and belief formed after reasonable inquiry, the statements and information contained in this report are true, accurate, and complete. A copy of this report has been sent to the Director of the Air Division, USEPA, Region IX.

Respectfully,

Kevin Kolnowski  
Name of Responsible Official

*Kevin M. Kolnowski*  
Signature

Electric Chief Operating Officer  
Title of Responsible Official

*4/15/20*  
Date

Facility #B4991  
City of Santa Clara,  
Silicon Valley Power  
Donald Von Raesfeld Power Plant  
850 Duane Avenue  
Santa Clara, CA 95054

**Donald Von Raesfeld (DVR) Power Plant  
Title V Semi-Annual Monitoring Report  
October 1, 2019 – March 31, 2020**

**Non-Compliance Summary**

Unit	Start		Corrected		Duration	Remarks
	Date	Time	Date	Time	(hr:min)	
1						
2						
3						

The monitoring frequency column indicates whether periodic (P) or continuous (C) monitoring is required. For periodic monitoring, the frequency of the monitoring has also been shown using the following codes: annual (A), quarterly (Q), monthly (M), weekly (W), daily (D), hourly (H), or on an event basis (E). No monitoring (N) has been required if the current applicable rule or regulation does not require monitoring, and the operation is unlikely to deviate from the applicable emission limit based upon the nature of the operation.

**Table VII – A  
Applicable Limits and Compliance Monitoring Requirements**

S-1 GAS TURBINE #1   S-2 HRSG DUCT BURNER #1   S-3 GAS TURBINE #2   S-4 HRSG DUCT BURNER #2

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance
								Yes/No
NO <sub>x</sub>	BAAQMD 9-3-303	N		125 ppm	BAAQMD 1-520.1	C	CEM	Yes
NO <sub>x</sub>	BAAQMD 9-9-301.2	N		0.15 lb/MW-hr or 5 ppmv	BAAQMD 9-9-501	C	CEM	Yes
NO <sub>x</sub>	SIP 9-9-301.3	Y		9 ppmv @ 15% O <sub>2</sub> , dry	BAAQMD 9-9-501	C	CEM	Yes
NO <sub>x</sub>	NSPS, 40 CFR 60.332 (a)(1)	Y		75 ppmv, @ 15% O <sub>2</sub> , dry 4-hr average	40 CFR 60.334(c) and BAAQMD Condition 24252, Part 27b	C	CEM	Yes
NO <sub>x</sub>		Y		None	40 CFR 75.10	C	CEM	Yes

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S-1 GAS TURBINE #1 S-2 HRSG DUCT BURNER #1 S-3 GAS TURBINE #2 S-4 HRSG DUCT BURNER #2**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance
								Yes/No
NO <sub>x</sub>	BAAQMD condition #24252, part 20b	Y		4.49 lb/hr, for each turbine and HRSG combined, except during turbine startup and shutdown	BAAQMD condition #24252, part 27b	C	CEM	Yes
NO <sub>x</sub>	BAAQMD condition #24252, part 20b	Y		4.49 lb/hr, for each turbine and HRSG combined, except during turbine startup and shutdown	BAAQMD condition #24252, part 31	P/A	Source test at maximum load	Yes
NO <sub>x</sub>	BAAQMD condition #24252, part 20a	Y		2.0 ppmv, @ 15% O <sub>2</sub> , dry, for each turbine and HRSG combined, 1-hr average except during turbine startup and shutdown	BAAQMD condition #24252, part 27b	C	CEM	Yes
NO <sub>x</sub>	BAAQMD condition #24252, part 20a	Y		2.0 ppmv, @ 15% O <sub>2</sub> , dry, each turbine and HRSG combined, 1-hr average except during turbine startup and shutdown	BAAQMD condition #24252, part 31	P/A	Source test at maximum load	Yes
NO <sub>x</sub>	BAAQMD condition #24252, part 21	Y		41 lb/turbine during start-up	BAAQMD condition #24252, part 27	P/D	Records, calculations	Yes
NO <sub>x</sub>	BAAQMD condition #24252, part 21	Y		8 lb/turbine during shutdown	BAAQMD condition #24252, part 27	P/D	Records, calculations	Yes
NO <sub>x</sub>	BAAQMD condition #24252, part 22a	Y		358.9 lb/day for turbines and HRSGs combined	BAAQMD condition #24252, part 27	C	CEM	Yes

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**Table VII – A**

**Applicable Limits and Compliance Monitoring Requirements**

**S-1 GAS TURBINE #1 S-2 HRSG DUCT BURNER #1 S-3 GAS TURBINE #2 S-4 HRSG DUCT BURNER #2**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance
								Yes/No
CO	BAAQMD condition #24252, part 23a	Y		43.3 ton/yr for turbines and HRSGs combined	BAAQMD condition #24252, part 27	C	CEM	Yes
CO	BAAQMD condition #24252, part 20d	Y		5.47 lb/hr, for each turbine and HRSG combined, except during turbine startup and shutdown	BAAQMD condition #24252, part 27	C	CEM	Yes
CO	BAAQMD condition #24252, part 20d	Y		5.47 lb/hr, for each turbine and HRSG combined, except during turbine startup and shutdown	BAAQMD condition #24252, part 31	P/A	Source test at maximum and minimum load	Yes
CO	BAAQMD condition #24252, part 20c	Y		4 ppmv, @ 15% O <sub>2</sub> , dry, for each turbine and HRSG combined, 3-hr average except during turbine startup and shutdown	BAAQMD condition #24252, part 27	C	CEM	Yes
CO	BAAQMD condition #24252, part 20c	Y		4 ppmv, @ 15% O <sub>2</sub> , dry, for each turbine and HRSG combined, 3-hr average except during turbine startup and shutdown	BAAQMD condition #24252, part 31	P/A	Source test at maximum and minimum load	Yes
CO	BAAQMD condition #24252, part 21	Y		35 lb/turbine during start-up	BAAQMD condition #24252, part 27	P/D	Records, calculations	Yes
CO	BAAQMD condition #24252, part 21	Y		10 lb/turbine during shutdown	BAAQMD condition #24252, part 27	P/D	Records, calculations	Yes

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**S-1 GAS TURBINE #1 S-2 HRSG DUCT BURNER #1 S-3 GAS TURBINE #2 S-4 HRSG DUCT BURNER #2**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance
								Yes/No
CO	BAAQMD condition #24252, part 22b	Y		377.9 lb/day for turbines and HRSGs combined	BAAQMD condition #24252, part 27	C	CEM	Yes
CO	BAAQMD condition #24252, part 23b	Y		48.4 ton/yr for turbines and HRSGs combined	BAAQMD condition #24252, part 27	C	CEM	Yes
CO <sub>2</sub>		Y		None	40 CFR 75.10	C	fuel flow monitor and CO <sub>2</sub> calculation	Yes
SO <sub>2</sub>	BAAQMD 9-1-301	Y		GLC <sup>1</sup> of 0.5 ppm for 3 min or 0.25 ppm for 60 min or 0.05 ppm for 24 hours		N		Yes
SO <sub>2</sub>	BAAQMD 9-1-302	Y		300 ppm (dry)		N		Yes
SO <sub>2</sub>	NSPS 40 CFR 60.333	Y		0.015% (vol) @15% O <sub>2</sub> (dry) or total sulfur content of fuel less than or equal to 0.8% sulfur by weight (8,000 ppmw)	NSPS 40 CFR 60.334(h)(3) (ii) and BAAQMD Condition 24252, Part 45	P/M	Monthly fuel sulfur analysis	Yes
SO <sub>2</sub>		Y		None	40 CFR 75.11, 40 CFR 75, Appendix D, part 2.3		Fuel measurement calculations	Yes

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**S-1 GAS TURBINE #1   S-2 HRSG DUCT BURNER #1   S-3 GAS TURBINE #2   S-4 HRSG DUCT BURNER #2**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance
								Yes/No
SO <sub>2</sub>	BAAQMD condition #24252, part 20h	Y		0.41 lb/hr for each turbine and HRSG power train	BAAQMD condition #24252, part 31	P/A	Source test at maximum and minimum load	Yes
SO <sub>2</sub>	BAAQMD condition #24252, part 20h	Y		0.000676 lb/MM BTU of natural gas fired for each turbine and HRSG power train	BAAQMD condition #24252, part 31	P/A	Source test at maximum and minimum load	Yes
SO <sub>2</sub>	BAAQMD condition #24252, part 22e	Y		18.2 lb/day for turbines and HRSGs combined	BAAQMD condition #24252, part 28	P/D	Records, calculations	Yes
SO <sub>2</sub>	BAAQMD condition #24252, part 23e	Y		2.93 ton/yr for turbines and HRSGs combined	BAAQMD condition #24252, part 28	P/D	Records, calculations	Yes
Opacity	BAAQMD 6-1-301	N		> Ringelmann No. 1 for no more than 3 minutes in any hour		N		Yes
Opacity	SIP 6-301	Y		> Ringelmann No. 1 for no more than 3 minutes in any hour		N		Yes
FP	BAAQMD 6-1-310	N		0.15 grain/dscf		N		Yes
FP	SIP 6-310	Y		0.15 grain/dscf		N		Yes
FP	BAAQMD 6-1-310.3	N		0.15 grain/dscf @ 6% O <sub>2</sub>		N		Yes
FP	SIP 6-310.3	Y		0.15 grain/dscf @ 6% O <sub>2</sub>		N		Yes

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**S-1 GAS TURBINE #1 S-2 HRSG DUCT BURNER #1 S-3 GAS TURBINE #2 S-4 HRSG DUCT BURNER #2**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance
								Yes/No
PM <sub>10</sub>	BAAQMD condition #24252, part 20i	Y		3.0 lb/hr, for each turbine when HRSG is not in operation	BAAQMD condition #24252, part 28	P/D	Records, calculations	Yes
PM <sub>10</sub>	BAAQMD condition #24252, part 20i	Y		4.3 lb/hr, for each turbine and HRSG combined	BAAQMD condition #24252, part 28	P/D	Records, calculations	Yes
PM <sub>10</sub>	BAAQMD condition #24252, part 21	Y		3 lb/turbine during start-up	BAAQMD condition #24252, part 27	P/D	Records, calculations	Yes
PM <sub>10</sub>	BAAQMD condition #24252, part 21	Y		3 lb/turbine during shutdown	BAAQMD condition #24252, part 27	P/D	Records, calculations	Yes
PM <sub>10</sub>	BAAQMD condition #24252, part 22d	Y		197.8 lb/day for turbines and HRSGs combined	BAAQMD condition #24252, part 28	P/D	Records, calculations	Yes
PM <sub>10</sub>	BAAQMD condition #24252, part 23d	Y		28.1 ton/yr for turbines and HRSGs combined	BAAQMD condition #24252, part 28	P/D	Records, calculations	Yes
POC	BAAQMD condition #24252, part 20g	Y		1.56 lb/hr (as CH <sub>4</sub> ) for each turbine and HRSG combined except during turbine startup and shutdown	BAAQMD condition #24252, part 31	P/A	Source test at maximum and minimum load	Yes

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**S-1 GAS TURBINE #1 S-2 HRSG DUCT BURNER #1 S-3 GAS TURBINE #2 S-4 HRSG DUCT BURNER #2**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance
								Yes/No
POC	BAAQMD condition #24252, part 20g	Y		0.00255 lb/MM BTU of natural gas fired (as CH4) for each turbine and HRSG combined except during turbine startup and shutdown	BAAQMD condition #24252, part 31	P/A	Source test at maximum and minimum load	Yes
POC	BAAQMD condition #24252, part 21	Y		2 lb/turbine during start-up (as CH4)	BAAQMD condition #24252, part 27	P/D	Records, calculations	Yes
POC	BAAQMD condition #24252, part 21	Y		1 lb/turbine during shutdown (as CH4)	BAAQMD condition #24252, part 27	P/D	Records, calculations	Yes
POC	BAAQMD condition #24252, part 22c	Y		71.9 lb/day (as CH4) for turbines and HRSGs combined	BAAQMD condition #24252, part 28	P/D	Records, calculations	Yes
POC	BAAQMD condition #24252, part 23c	Y		11.2 ton/yr (as CH4) for turbines and HRSGs combined	BAAQMD condition #24252, part 28	P/D	Records, calculations	Yes
NH <sub>3</sub>	BAAQMD condition #24252, Part 20e	N		10 ppmv, @ 15% O <sub>2</sub> , dry, averaged over 3 hours for each turbine and HRSG combined except during turbine startup or shutdown	BAAQMD condition #24252, part 30	P	Source Testing	Yes

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**S-1 GAS TURBINE #1 S-2 HRSG DUCT BURNER #1 S-3 GAS TURBINE #2 S-4 HRSG DUCT BURNER #2**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance
								Yes/No
NH <sub>3</sub>	BAAQMD condition #24252, Part 20e	N		10 ppmv, @ 15% O <sub>2</sub> , dry, averaged over 3 hours for each turbine and HRSG combined except during turbine startup or shutdown	BAAQMD condition #24252, part 20e	C	Ammonia injection rate monitor	Yes
Formaldehyde	BAAQMD condition #24252, part 26	N		2706 lb/yr for turbines and HRSGs combined	BAAQMD condition #24252, part 29	P/D	Records, calculations	Yes
Benzene	BAAQMD condition #24252, part 26	N		112 lb/yr for turbines and HRSGs combined	BAAQMD condition #24252, part 29	P/D	Records, calculations	Yes
Specified PAH's	BAAQMD condition #24252, part 26	N		0.71 lb/yr for turbines and HRSGs combined	BAAQMD condition #24252, part 29	P/D	Records, calculations	Yes
Heat input limit	BAAQMD condition #24252, part 14	Y		610.6 MM BTU/hr, 3-hr average for each Turbine and HRSG power train	BAAQMD condition #24252, part 27	C	Fuel meter, firing monitor, calculations	Yes
Heat Input Limit	BAAQMD condition #24252, part 15	Y		13,559.2 MM BTU/calendar day, for each Turbine and HRSG power train	BAAQMD condition #24252, part 27	C	fuel meter, firing monitor, calculations	Yes
Heat Input Limit	BAAQMD condition #24252, part 16	Y		8,682,544 MM BTU/yr for S-1, S-3, Turbines and S-2, S-4, HRSGs combined	BAAQMD condition #24252, part 27	C	fuel meter, firing monitor, calculations	Yes

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**Table VII - B  
Applicable Limits and Compliance Monitoring Requirements  
S-5 COOLING TOWER**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance
								Yes/No
Opacity	BAAQMD 6-1-301	N		≥ Ringelmann No. 1 for no more than 3 minutes in any hour		N		Yes
Opacity	SIP 6-301	Y		> Ringelmann No. 1 for no more than 3 minutes in any hour	N	N		Yes
FP	BAAQMD 6-1-310	N		0.15 grain/dscf	N	N		Yes
FP	SIP 6-310	Y		0.15 grain/dscf	N	N		Yes