Pacific Gas and Electric Company®

Mailing Address:
Pacific Gas & Electric Company
Gateway Generating Station
3225 Wilbur Ave.
Antioch, CA 94509
(925) 522-7801

October 27, 2021

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

TV Tracking #: 317

1. ☐ RECEIVED IN ENFORCEMENT: 10/27/2021

Subject: Facility #B8143: Semiannual Monitoring Report (April 1, 2021 – September 30, 2021)

On October 30, 2013, the Bay Area Air Quality Management District (BAAQMD) issued Gateway Generating Station, LLC (GGS) an initial Major Facility Review Permit (Permit) for the operation of a power generating station located in Antioch, California (Gateway Generating Station [GGS]).[1] This Permit was renewed on September 3, 2020. Per Permit Condition I.F, GGS is required to evaluate the monitoring requirements in the Permit and report to BAAQMD any instances of non-compliance identified during the evaluation. GGS is required to submit a Semiannual Monitoring Report (SAMR) to the BAAQMD by October 30th for the period of April 1st through September 30th.

Attachment 1 of this letter serves as the SAMR for the period of April 1, 2021 through September 30, 2021 (reporting period). The format of the SAMR is based on Tables VII-A and VII-B listed in Section VII – *Applicable Limits and Compliance Monitoring Requirements* of the Permit. As shown in Attachment 1 of this letter, GGS has added columns to Tables VII-A and VII-B to document the compliance status of each monitoring requirement during the reporting period.

On April 16, 2021, a Reportable Compliance Activity (RCA) was submitted to the BAAQMD and subsequently to the California Energy Commission (CEC) to notify them of ammonia slip excess emission detection. This excess emission was a result of using a new set of ammonia correction factors that were derived from the source test conducted in January 2021. In the 30-day Follow-up Report, the GGS requested the BAAQMD to review the acceptability of using the uncharacteristically high ammonia correction factors. In an email on June 29, 2021, the BAAQMD directed the GGS to not use the correction factors derived from the 2021 source test in calculating ammonia slip emission, but instead use the previous year's 2020 source test data until after the BAAQMD has certified the 2021 source test data. Attachment 2 documents this event as described in the 30-day Follow-up Report and also the BAAQMD's response.

[1] Pacific Gas and Electric Company (PG&E) is the parent company to GGS, LLC.

On April 28, 2021, a tube leak in the Heat Recovery Steam Generator (HRSG) resulted in steam leaking into the Selective Catalytic Reduction (SCR) system and impacted the NOx abatement by diluting the concentration of ammonia in the SCR, thereby causing it to fail. This event resulted in 1-hr average corrected NOx of 2.1 ppm for the period of 12:00 AM to 12:59 AM. This problem was investigated promptly, a corrective measure was implemented, and confirmed that the measure worked effectively. A Reportable Compliance Activity (RCA) was submitted to the BAAQMD and CEC to give notice of the excess emission event and to request equipment breakdown event relief. Subsequent 10-day and 30-day reports were submitted to the BAAQMD and CEC. The BAAQMD Inspector indicated verbally, during the site visit after the event, that as per BAAQMD policy on 20% threshold allowance, the Breakdown Relief request will likely be granted, i.e. the 0.1 ppm in excess of the 2.0 ppm permit limit was less than 20% of the 2.0 permit limit. To date, the BAAQMD has not formally responded yet. Attachment 3 documents the details on this event as described in the 30-day Follow-up Report.

GGS determined, through reasonable inquiry, that all required monitoring was performed during the reporting period and after review of the monitoring results, all sources were found to be in compliance with the monitoring requirements provided in Tables VII-A and VII-B. Copies of all monitoring records are available at GGS.

Based upon the information and belief formed after reasonable inquiry, I, as the responsible official of GGS, certify that the information contained in this SAMR is true, accurate, and complete. If you have any questions or comments about the information presented in this letter, please do not hesitate to call me at (530) 934-9061.

Sincerely,

PACIFIC GAS AND ELECTRIC COMPANY

Steve Royall
Director, Fossil Generation

Attachment: a/s

cc. John Heiser
Compliance Project Manager
California Energy Commission

ATTACHMENT 1

Semiannual Monitoring Report
Reporting Period: April 1, 2021 – September 30, 2021

Semiannual Monitoring Report

October 31, 2021

Site #: B8143
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Period: April 1, 2021 to September 30, 2021

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-41, S-43 GAS TURBINES
S-42, S-44 HEAT RECOVERY STEAM GENERATORS

Type of Limit	Citation of Limit	FE Y/N	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance Yes (Y) or No (N)	Continuous (C) or Intermittent (I)	Days Out of Compliance/ Comments
NO_x	BAAQMD 9-3-303	N	125 ppm	BAAQMD 1-520.1	C	CEM	Y	C	
NO_x	BAAQMD 9-9-301.1.3	Y	9 ppmv @ 15% O2, dry	BAAQMD 9-9-501	C	CEM	Y	C	
NO_x	BAAQMD 9-9-301.2	N	0.15 lb/MW-hr or 5 ppmv	BAAQMD 9-9-501	C	CEM	Y	C	
NO_x	SIP 9-9-301.3	Y	9 ppmv @ 15% O_2, dry	BAAQMD 9-9-501	C	CEM	Y	C	
NO_x	NSPS 40 CFR 60.44Da (a)(1)	Y	0.2 lb/MMBtu	40 CFR 60.48Da(j)	C	CEM and fuel monitoring	Y	C	
NO_x	NSPS 40 CFR 60.44Da (d)(1)	Y	1.6 lb/MW-hr (rolling 24-hr average)	40 CFR 60.48Da(k),	C	CEM and load monitoring	Y	C	
NO_x	NSPS, 40 CFR 60.332 (a)(1)	Y	75 ppmv, @ 15% O_2, dry 4-hr average	40 CFR 60.334(c)	C	CEM	Y	C	
NO_x		Y	None	40 CFR 75.10	C	CEM	Y	C	
NO_x	BAAQMD condition #18138, part 20a	Y	20 lb/hr, for each turbine and HRSG combined, except during turbine startup, shutdown, or steam turbine cold start-up	BAAQMD condition #18138, part 26b	C	CEM	Y	C	

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NO_x	BAAQMD condition #18138, part 20a	Y	20 lb/hr, for each turbine and HRSG combined, except during turbine startup, shutdown, or steam turbine cold start-up	BAAQMD condition #18138, part 30	P/A	Source test at maximum load	Y	C	
NO_x	BAAQMD condition #18138, part 20a	Y	0.009 lb/MM BTU, for each turbine and HRSG combined, except during turbine startup, shutdown, or steam turbine cold start-up	BAAQMD condition #18138, part 26b	C	CEM	Y	C	
NO_x	BAAQMD condition #18138, part 20a	Y	0.009 lb/MM BTU, for each turbine and HRSG combined, except during turbine startup, shutdown, or steam turbine cold start-up	BAAQMD condition #18138, part 30	P/A	Source test at maximum load	Y	C	
NO_x	BAAQMD condition #18138, part 20b	Y	2.5 ppmv, @ 15% O_2, dry, for each turbine and HRSG combined, 1-hr average except during turbine startup, shutdown, or steam turbine cold start-up	BAAQMD condition #18138, part 26b	C	CEM	Y	C	

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NO_x	BAAQMD condition #18138, part 20b	Y	2.5 ppmv, @ 15% O_2, dry, for each turbine and HRSG combined, 1-hr average except during turbine startup, shutdown, or steam turbine cold start-up	BAAQMD condition #18138, part 30	P/A	Source test at maximum load	Y	C	
NO_x	BAAQMD condition #18138, CD-1	Y	2.0 ppmv, @ 15% O_2, dry, for each turbine and HRSG combined, 1-hr average except during turbine startup, and shutdown	BAAQMD condition #18138, part 26b	C	CEM	N	I	1 hour (Apr 28, 2021, 12:00 AM - 12:59 AM with 1-hr average conc. of 2.1 ppm. Equipment breakdown relief requested)
NO_x	BAAQMD condition #18138, part 21	Y	189 lb/turbine during start-up	BAAQMD condition #18138, part 26	P/D	Records, calculations	Y	C	
NO_x	BAAQMD condition #18138, part 21	Y	59 lb/turbine during shutdown	BAAQMD condition #18138, part 26	P/D	Records, calculations	Y	C	

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NO_x	BAAQMD condition #18138, part 21	Y	452 lb/turbine during steam turbine cold start-up	BAAQMD condition #18138, part 26	P/D	Records, calculations	Y	C	
NO_x	BAAQMD condition #18138, part 23	Y	1,994 lb/day for turbines and HRSGs combined	BAAQMD condition #18138, part 26	C	CEM	Y	C	
NO_x	BAAQMD condition #18138, part 24	Y	174.3 ton/yr for turbines, HRSGs, and diesel fire pump combined (includes emissions from commissioning period)	BAAQMD condition #18138, part 26	C	CEM	Y	C	
NO_x	BAAQMD condition #18138, CD-3	Y	139.2 ton/yr for turbines and HRSGs combined	BAAQMD condition #18138, part 26	C	CEM	Y	C	
CO	BAAQMD condition #18138, part 20c	Y	29.22 lb/hr, for each turbine and HRSG combined, except during turbine startup, shutdown, or steam turbine cold start-up	BAAQMD condition #18138, part 26b	C	CEM	Y	C	

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CO	BAAQMD condition #18138, part 20c	Y	29.22 lb/hr, for each turbine and HRSG combined, except during turbine startup, shutdown, or steam turbine cold start-up	BAAQMD condition #18138, part 30	P/A	Source test at maximum and minimum load	Y	C	
CO	BAAQMD condition #18138, part 20c	Y	0.013 lb/MM BTU, for each turbine and HRSG combined, except during turbine startup, shutdown, or steam turbine cold start-up	BAAQMD condition #18138, part 26b	C	CEM	Y	C	
CO	BAAQMD condition #18138, part 20c	Y	0.013 lb/MM BTU, for each turbine and HRSG combined, except during turbine startup, shutdown, or steam turbine cold start-up	BAAQMD condition #18138, part 30	P/A	Source test at maximum and minimum load	Y	C	
CO	BAAQMD condition #18138, part 20d	Y	6 ppmv, @ 15% O_2, dry, for each turbine and HRSG combined, 3-hr average except during turbine startup, shutdown, or steam turbine cold start-up,	BAAQMD condition #18138, part 26b	C	CEM	Y	C	

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CO	BAAQMD condition #18138, part 20d	Y	6 ppmv, @ 15% O_2, dry, for each turbine and HRSG combined, 3-hr average except during turbine startup, shutdown, or steam turbine cold start-up	BAAQMD condition #18138, part 30	P/A	Source test at maximum and minimum load	Y	C	
CO	BAAQMD condition #18138, part 21	Y	291 lb/turbine during start-up	BAAQMD condition #18138, part 26	P/D	Records, calculations	Y	C	
CO	BAAQMD condition #18138, part 21	Y	73 lb/turbine during shutdown	BAAQMD condition #18138, part 26	P/D	Records, calculations	Y	C	
CO	BAAQMD condition #18138, part 21	Y	990 lb/turbine during steam turbine cold start-up	BAAQMD condition #18138, part 26	P/D	Records, calculations	Y	C	
CO	BAAQMD condition #18138, part 23b	Y	3,602 lb/day for turbines and HRSGs combined	BAAQMD condition #18138, part 26b	C	CEM	Y	C	

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CO	BAAQMD condition #18138, part 24b	Y	259.1 ton/yr for turbines, HRSGs, and diesel fire pump combined (includes emissions from commissioning period)	BAAQMD condition #18138, part 26b	C	CEM	Y	C	
CO_2		Y	None	40 CFR 75.10	C	fuel flow monitor and CO_2 calculation	Y	C	
SO_2	BAAQMD 9-1-301	Y	GLC of 0.5 ppm for 3 min or 0.25 ppm for 60 min or 0.05 ppm for 24 hours		N		N/A	N/A	
SO_2	BAAQMD 9-1-302	Y	300 ppm (dry)		N		N/A	N/A	
SO_2	NSPS 40 CFR 60.43Da (b)(2)		0.2 lb/MM BTU, 24 hr average except during startup, or shutdown		N		N/A	N/A	

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SO_2	NSPS 40 CFR 60.333	Y	0.015% (vol) @15% O_2 (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 18138, Part 44	P/M	Monthly fuel sulfur analysis	Y	C	
SO_2		Y	None	40 CFR 75.11, 40 CFR 75, Appendix D, part 2.3	P/M	Fuel measure-ments, calculations	Y	C	
SO_2	BAAQMD condition #18138, part 44	Y	Fuel sulfur content of 1 gr/100 scf	BAAQMD condition #18138, part 44	P/M	Fuel testing	Y	C	
SO_2	BAAQMD condition #18138, CD-4	Y	Fuel sulfur content of 1 gr/100 scf	BAAQMD condition #18138, part 44	P/M	Fuel testing	Y	C	
SO_2	BAAQMD condition #18138, part 20g	Y	6.18 lb/hr, for turbine and HRSG combined	BAAQMD condition #18138, part 30	P/A	Source test at maximum load	Y	C	

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SO_2	BAAQMD condition #18138, part 20g	Y	0.0028 lb/MM BTU, for turbine and HRSG combined	BAAQMD condition #18138, part 30	P/A	Source test at maximum load	Y	C	
SO_2	BAAQMD condition #18138, part 23e	Y	297 lb/day for turbines and HRSGs combined	BAAQMD condition #18138, part 27	P/D	Records, calculations	Y	C	
SO_2	BAAQMD condition #18138, part 24e	Y	48.5 ton/yr for turbines, HRSGs, and diesel fire pump combined (includes emissions from commissioning period)	BAAQMD condition #18138, part 27	P/D	Records, calculations	Y	C	
SO_2	BAAQMD condition #18138, part CD-3	Y	18.5 ton/yr for turbines and HRSGs combined (includes emissions from commissioning period)	BAAQMD condition #18138, part 27	P/D	Records, calculations	Y	C	
Opacity	BAAQMD 6-1-301	N	> Ringelmann No. 1 for no more than 3 minutes in any hour		N		N/A	N/A	
Opacity	SIP 6-301	Y	> Ringelmann No. 1 for no more than 3 minutes in any hour		N		N/A	N/A	

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Opacity	NSPS 40 CFR 60.42Da(b)	Y	20% Opacity (6 min avg.) with one 6 min avg. at less than 27% Opacity	40 CFR 60.49Da(a) (3)[2]	N		N/A	N/A	
FP	BAAQMD 6-1-310	N	0.15 grain/dscf		N		N/A	N/A	
FP	SIP 6-310	Y	0.15 grain/dscf		N		N/A	N/A	
FP	BAAQMD 6-1-310.3	N	0.15 grain/dscf @ 6% O_2		N		N/A	N/A	
FP	SIP 6-310.3	Y	0.15 grain/dscf @ 6% O_2		N		N/A	N/A	
PM	NSPS 40 CFR 60.42Da (a)(1)	Y	0.03 lb/MMBtu of PM		N		N/A	N/A	
PM	NSPS 40 CFR 60.42Da(b)	Y	< 20% opacity, 6 minute average, except one six minute period/hr up to 27% opacity		N		N/A	N/A	
PM_{10}	BAAQMD condition #18138, part 20h	Y	11.0 lb/hr, for each turbine and HRSG combined (duct burners not in operation) 13.0 lb/hr, for each turbine and HRSG combined (duct burners in operation)	BAAQMD condition #18138, part 30	P/A	Source test at maximum load	Y	C	

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PM_{10}	BAAQMD condition #18138, part 20h	Y	0.00588 lb/MMBTU, for each turbine and HRSG combined (duct burners not in operation) 0.00584 lb/MMBTU, for each turbine and HRSG combined (duct burners not in operation)	BAAQMD condition #18138, part 30	P/A	Source test at maximum load	Y	C	
PM_{10}	BAAQMD condition #18138, part 23d	Y	624 lb/day for turbines and HRSGs combined	BAAQMD condition #18138, part 27	P/D	Records, calculations	Y	C	
PM_{10}	BAAQMD condition #18138, part 24d	Y	105 ton/yr for turbines, HRSGs, and diesel fire pump combined (includes emissions from commissioning period)	BAAQMD condition #18138, part 27	P/D	Records, calculations	Y	C	
POC	BAAQMD condition #18138, part 20f	Y	5.6 lb/hr (as CH4) for each turbine, and HRSG combined except during turbine startup, shutdown, or steam turbine cold start-up	BAAQMD condition #18138, part 30	P/A	Source test at maximum load	Y	C	

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POC	BAAQMD condition #18138, part 20f	Y	0.0025 lb/MM BTU (as CH4) for each turbine, and HRSG combined except during turbine startup, shutdown, or steam turbine cold start-up	BAAQMD condition #18138, part 30	P/A	Source test at maximum load	Y	C	
POC	BAAQMD condition #18138, part 21	Y	26 lb/turbine during start-up	BAAQMD condition #18138, part 27	P/D	Records, calculations	Y	C	
POC	BAAQMD condition #18138, part 21	Y	6 lb/turbine during shutdown	BAAQMD condition #18138, part 27	P/D	Records, calculations	Y	C	
POC	BAAQMD condition #18138, part 21	Y	109 lb/turbine during steam turbine cold start-up	BAAQMD condition #18138, part 27	P/D	Records, calculations	Y	C	
POC	BAAQMD condition #18138, part 23c	Y	468 lb/day (as CH4) for turbines and HRSGs combined	BAAQMD condition #18138, part 27	P/D	Records, calculations	Y	C	

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POC	BAAQMD condition #18138, part 24c	Y	46.6 ton/yr for turbines, HRSGs, and diesel fire pump combined (includes emissions from commissioning period)	BAAQMD condition #18138, part 27	P/D	Records, calculations	Y	C	
NH_3	BAAQMD condition #18138, Part 20e	N	5 ppmv, @ 15% O_2, dry, averaged over 3 hrs for each turbine and HRSG combined except during turbine startup or shutdown	BAAQMD condition #18138, part 26c, part 29, part AM-1	C	Ammonia injection rate monitor, calculations, and annual source test	Y	C	
Formal-dehyde	BAAQMD condition #18138, part 25.1	N	4,102 lb/yr for turbines and HRSGs combined	BAAQMD condition #18138, part 28	P/D	Records, calculations	Y	C	
Formal-dehyde	BAAQMD condition #18138, part 25.1	N	4,102 lb/yr for turbines and HRSGs combined	BAAQMD condition #18138, part 32	P/every two years on P-1 or P-2	Source test	Y	C	

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Benzene	BAAQMD condition #18138, part 25.1	N	506 lb/yr for turbines and HRSGs combined	BAAQMD condition #18138, part 28	P/D	Records, calculations	Y	C	
Benzene	BAAQMD condition #18138, part 25.1	N	506 lb/yr for turbines and HRSGs combined	BAAQMD condition #18138, part 32	P/every two years on P-1 or P-2	Source test	Y	C	
Specified PAH's	BAAQMD condition #18138, Part 25.1	N	38 lb/yr for turbines and HRSGs combined	BAAQMD condition #18138, part 28	P/D	Records, calculations	Y	C	

Semiannual Monitoring Report

October 31, 2021

Site #: B8143
Site Name: Gateway Generating Station, LLC
Address: 3225 Wilbur Avenue, Antioch CA 94509
Period: April 1, 2021 to September 30, 2021

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-41, S-43 GAS TURBINES
S-42, S-44 HEAT RECOVERY STEAM GENERATORS

Type of Limit	Citation of Limit	FE Y/N	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance Yes (Y) or No (N)	Continuous (C) or Intermittent (I)	Days Out of Compliance/ Comments
Specified PAH's	BAAQMD condition #18138, Part 25.1	N	38 lb/yr for turbines and HRSGs combined	BAAQMD condition #18138, part 32	P/every two years on P-1 or P-2	Source test	Y	C	
Hexane	BAAQMD condition #18138, Part 25.2	N	20,000 lb/yr for turbines and HRSGs combined	BAAQMD condition #18138, part 32	P/every two years on P-1 or P-2	Source test	Y	C	
Heat Input limit	BAAQMD condition #18138, part 14	Y	2,227 MM BTU/hr, 3-hr average for each Turbine and HRSG, total	BAAQMD condition #18138, part 26a	C	Fuel meter, firing monitor, calculations	Y	C	
Heat Input Limit	BAAQMD condition #18138, part 15	Y	49,950 MM BTU/calendar day, for each Turbine and HRSG, total	BAAQMD condition #18138, part 26a	C	fuel meter, firing monitor, calculations	Y	C	

Semiannual Monitoring Report

October 31, 2021

Site #: B8143
Site Name: Gateway Generating Station, LLC
Address: 3225 Wilbur Avenue, Antioch CA 94509
Period: April 1, 2021 to September 30, 2021

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-41, S-43 GAS TURBINES
S-42, S-44 HEAT RECOVERY STEAM GENERATORS

Type of Limit	Citation of Limit	FE Y/N	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance Yes (Y) or No (N)	Continuous (C) or Intermittent (I)	Days Out of Compliance/ Comments
Heat Input Limit	BAAQMD condition #18138, part 16	Y	34,900,000 MM BTU/yr for S-41, S-43, Turbines and S-42, S-44, HRSGs combined	BAAQMD condition #18138, part 26a	C	fuel meter, firing monitor, calculations	Y	C	

Semiannual Monitoring Report

October 31, 2020

Site #: B8143
Site Name: Gateway Generating Station, LLC
Address: 3225 Wilbur Avenue, Antioch CA 94509
Period: April 1, 2020 to September 30, 2020

Table VII – B
Applicable Limits and Compliance Monitoring Requirements
S-47, FIRE PUMP DIESEL ENGINE

Type of Limit	Citation of Limit	FE Y/N	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance Yes (Y) or No (N)	Continuous (C) or Intermittent (I)	Days Out of Compliance/ Comments
Opacity	BAAQMD 6-1-303.1	N	> Ringelmann No. 2 for no more than 3 minutes in any hour		N		N/A	N/A	
Opacity	SIP Regulation 6-303.1	Y	Ringelmann 2.0 for 3 minutes in any hour		N		N/A	N/A	
FP	BAAQMD 6-1-310	N	0.15 grain/dscf		N		N/A	N/A	
FP	SIP Regulation 6-310	Y	0.15 gr/dscf		N		N/A	N/A	
SO_2	BAAQMD 9-1-301	Y	Property Line Ground Level Limits: ≤ 0.5 ppm for 3 minutes and ≤ 0.25 ppm for 60 min. and ≤0.05 ppm for 24 hours	None	N	N/A	N/A	N/A	
SO_2	BAAQMD 9-1-304	Y	Fuel Sulfur Limit 0.5%	BAAQMD Condition # 19498, Parts 5 and 8	P/E	Vendor Certification	Y	C	
Reliability Related Hours	BAAQMD 9-8-330	N	100 hours until 1/1/12 50 hours after 1/1/12	9-8-502	P/E	Totalizing meter, record keeping	Y	C	

Semiannual Monitoring Report

October 31, 2020

Site #: B8143
Site Name: Gateway Generating Station, LLC
Address: 3225 Wilbur Avenue, Antioch CA 94509
Period: April 1, 2020 to September 30, 2020

Table VII – B
Applicable Limits and Compliance Monitoring Requirements
S-47, FIRE PUMP DIESEL ENGINE

Type of Limit	Citation of Limit	FE Y/N	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance Yes (Y) or No (N)	Continuous (C) or Intermittent (I)	Days Out of Compliance/ Comments
Hours for maintenance and testing	Title 17, California Code of Regulations section 93115.6(a) (4)	N	Not operate more than the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 – "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 2002 edition	93115.10(d)	P/E	Totalizing meter, record keeping	Y	C	
Reliability-related activities	BAAQMD Condition #25057, part 1	N	50 hours per calendar year	BAAQMD Condition #25057, part 3, 4	P/E	Totalizing meter, record-keeping	Y	C	

ATTACHMENT 2

30-Day Report on Reportable Compliance Activity Excess Ammonia Slip Emission (Episodes #07Z15) and BAAQMD's Response

Pacific Gas and Electric Company®

Mailing Address:
Pacific Gas & Electric Company
Gateway Generating Station
3225 Wilbur Ave.
Antioch, CA 94509
(925) 522-7801

May 13, 2021

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

Subject: Facility #B8143: 30-Day Report on RCA Excess Episode #07Z15

Dear Sir/Madam,

This report provides the 30-day follow-up report on a Reportable Compliance Activity (RCA) submitted to the Bay Area Air Quality Management District (BAAQMD) on April 16, 2021 to notify the District of an ammonia slip excess emission episode (#07Z15) that was detected on April 15, 2021 (See Attachment 1: 10-Day Report on RCA Episode #07Z15.). This report complies with the requirement of Section I.F. of the Major Facility Permit for Gateway Generating Station (GGS).

The PG&E Gateway Generating Station conducted its investigation of the indicated event and reports the result herewith as follows.

During the regular examination of the CEMS-DAHS data on April 15, 2021, an excess emission on ammonia slip was detected on Unit P-12 during the following dates/time: 2-18-2021/7:00 to 7:59 AM, 3-1-2021/5:00 to 5:59 AM, and 3-17-2021/5:00 AM to 5:59 AM (See the CEMS-DAHS report printout that was included in Attachment 1). This detection was a result of the new set of ammonia correction factors being uploaded into the CEMS-DAHS database on April 14, 2021and applied retroactively at the conclusion of the annual source test on January 15, 2021.

The 2021 source test report was submitted to the BAAQMD on March 11, 2021. To this date, we have not received any feedback from the BAAQMD yet as to the acceptability of the test results. Of interest to us was the correlation between the heat input rates, inlet/outlet NOx, ammonia injection rate, and the corresponding ammonia slip emission concentration at the stack (Reference: Permit to Operate (PTO) condition part #29). We noticed that the calculated ammonia correction factor for Unit P-12 at maximum load was uncharacteristically high at 5.197 when compared with historical data (See Attachment 2: Summary of Historical Correction Factors). We reached out to the Source Test contractor, but we are still waiting for a more comprehensive explanation as to its cause. A similar scenario was encountered at GGS in 2016. At that time, the BAAQMD rescinded part of the source test report on mole ratio/ammonia slip calculation. Tim Underwood of BAAQMD coordinated with the source test contractor to rectify the error. A revised source test

report was re-submitted (See Attachment 3: Tim Underwood email of 04/26/2016, Re: The Recent Turbine Test Report.).

In this regard, we are respectfully requesting the BAAQMD to let us know of the result of its evaluation of the 2021 source test report, specifically on the acceptability of the high correction factor as referenced above.

This follow-up report is also being copied to the California Energy Commission (CEC) in compliance of the CEC Conditions of Certification AQ-35.

If you have any questions regarding this submittal, please feel free to call me or Angel Espiritu at (510) 861-1597, (925) 522-7838.

Sincerely,

Tim Wisdom

Tim Wisdom
Senior Plant Manager

Attachments: a/s

Attachment 1

10-Day Report on RCA Episode #07Z15

Pacific Gas and Electric Company®

Mailing Address:
Pacific Gas & Electric Company
Gateway Generating Station
3225 Wilbur Ave.
Antioch, CA 94509
(925) 522-7801

April 30, 2021

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

Subject: Facility #B8143: 10-Day Report on RCA #07Z15

Dear Sir/Madam,

In compliance with the Bay Area Air Quality Management District Permit (BAAQMD) Condition 18138 Part 35, the PG&E Gateway Generating Station (GGS) submitted the attached Reportable Compliance Activity (RCA) on April 16, 2021 regarding ammonia slip excess emission that was detected on April 15, 2021, on which a reference ID #07Z15 was received from the BAAQMD.

In following the new BAAQMD RCA Form, where only 30-day written follow-up report requirement was indicated, GGS submitted an RCA notification on April 16, 2021. That submission included a detailed report of the event and the results of the initial investigation, CEMS data, and source testing report. We believe this constituted the 10-day follow-up report. To ensure certainty around completeness of document delivery, GGS is resubmitting this follow-up report.

During the regular examination of the CEMS-DAHS data yesterday (April 15, 2021), an excess emission on calculated ammonia slip was detected on Unit P-12 during the following dates/time: 2-18-2021/7:00 to 7:59 AM, 3-1-2021/5:00 to 5:59 AM, and 3-17-2021/5:00 AM to 5:59 AM (see attached CEMS-DAHS report printout). This detection was a result of the new set of ammonia correction factors being applied retroactively at the conclusion of the annual source test on January 15, 2021. This new set of correction factors was uploaded into the CEMS-DAHS database on April 14, 2021. Please note that the corresponding 3-hour average mole (molar) ratio values for the same indicated dates/times were all below the permit limits (see attached CEMS-DAHS report printout).

Upon examination of the ammonia correction factor calculation in the January 15, 2021 Source Test, we noted that the values for the maximum load were higher than the values for other load configurations and uncharacteristically higher compared to previous years' results on maximum load (see attached summary of previous years' correction factors). We also noted that the inlet NOx concentration, which is a direct function of the ammonia correction factor, was about 1 part per million (ppm) higher than the 2020 source test result. Upon careful analysis of the calculation, this increase in inlet NOx value was sufficient to bump up the resultant correction factor value.

This leads us to believe that there is need to investigate further the cause of this increase in inlet NOx at the time of this year's test.

This follow-up report is also being copied to the California Energy Commission (CEC) in compliance of the CEC Conditions of Certification AQ-35.

If you have any questions regarding this submittal, please feel free to call me or Angel Espiritu at (510) 861-1597, (925) 522-7838.

Sincerely,

Tim Wisdom

Tim Wisdom
Senior Plant Manager

Enclosure: a/s

Cc: John Heiser
Project Compliance Manager
California Energy Commission

Attachments: a/s

Unit P12 Excess Emissions

Gateway Generating Facility

Excess Emissions for 1/1/2021 thru 4/15/2021: NH3 ppm @15% O2 3-Hr Rolling

Parameter	Start	End	Duration	Value	Min	Max	Limit	Reason	Action
NH3 ppm @15% O2 3-Hr Rolling	2/18/2021 7:00 AM	7:59 AM	1 hour	5.6	5.6	5.6	5.0	*Not specified*	
NH3 ppm @15% O2 3-Hr Rolling	3/1/2021 5:00 AM	6:59 AM	2 hours	5.3	5.1	5.5	5.0	*Not specified*	
NH3 ppm @15% O2 3-Hr Rolling	3/17/2021 5:00 AM	6:59 AM	2 hours	5.7	5.4	5.9	5.0	*Not specified*	
Total duration			5 hours						

Gateway Generating Facility

Antioch, CA

ABE4_P-12 Ammonia Slip Check

February 18, 2021

Hour	SCR NOx ppm 1-Hr	60-NOx ppm 1-Hr	NH3 Flow lb/hr 1-Hr	NOx ppm @15% O2 1-Hr	DB Gas On-Time 1-Hr	Combined Heat Input Rate mmBtu/hr 1-Hr	CT Megawatts 1-Hr	Megawatts - Gross Load Range	NH3 Molar Ratio 1-Hr	NH3 Slip Correction Factor 1 Hr	NH3 Slip ppm 1-Hr	Process Code 1-Hr	NH3 Molar Ratio 3-Hr Rolling	NH3 Molar Ratio 3-Hr Rolling Limit	NH3 ppm @15% O2 1-Hr	NH3 ppm @15% O2 3-Hr Rolling
02/18/2021 00	13.2	2.0	85.62	1.5	1.00	1969.2	163.9	9	1.1	3.551	4.30	Normal	1.1	1.4	3.21	3.3
02/18/2021 01	14.2	2.0	92.85	1.5	1.00	2034.9	166.5	10	1.1	4.617	4.57	Normal	1.1	1.4	3.37	3.4
02/18/2021 02	14.3	2.0	93.37	1.5	1.00	2036.1	166.5	10	1.1	4.637	4.41	Normal	1.1	1.4	3.25	3.3
02/18/2021 03	14.3	2.0	93.15	1.5	1.00	2033.1	166.1	10	1.1	4.588	4.31	Normal	1.1	1.4	3.18	3.3
02/18/2021 04	14.3	2.0	94.29	1.5	1.00	2035.4	166.5	10	1.1	4.626	5.04	Normal	1.1	1.4	3.72	3.4
02/18/2021 05	14.4	2.1	96.02	1.5	1.00	2058.6	168.9	10	1.1	5.002	5.90	Normal	1.1	1.4	4.35	3.8
02/18/2021 06	14.5	2.0	99.53	1.5	1.00	2061.4	169.2	10	1.1	5.048	8.23	Normal	1.1	1.4	5.99	4.7
02/18/2021 07	11.4	2.0	85.53	1.5	1.00	1922.9	163.3	9	1.3	2.799	8.31	Normal	1.2	1.4	6.37	5.6
02/18/2021 08	9.7	1.8	67.73	1.5	0.72	1663.1	144.7	8	1.3	0.428	1.15	Normal	1.2	1.4	0.94	4.4
02/18/2021 09	9.3	1.8	53.11	1.5	0.00	1489.2	130.0	7	1.2	0.410	0.62	Normal	1.3	1.6	0.52	2.6
02/18/2021 10	9.1	1.8	50.34	1.6	0.00	1220.8	92.1	6	1.4	0.237	0.64	Normal	1.3	1.6	0.56	0.7
02/18/2021 11	9.5	1.8	68.32	1.5	0.00	1724.5	159.6	8	1.3	0.404	0.94	Normal	1.3	1.6	0.79	0.6
02/18/2021 12	9.4	1.8	69.87	1.5	0.00	1752.0	162.7	8	1.3	0.393	0.92	Normal	1.3	1.6	0.79	0.7
02/18/2021 13	9.2	1.8	57.52	1.5	0.00	1540.3	136.9	7	1.3	0.445	0.91	Normal	1.3	1.5	0.77	0.8
02/18/2021 14	9.3	1.8	55.36	1.5	0.00	1467.6	127.3	7	1.3	0.394	0.80	Normal	1.3	1.6	0.67	0.7
02/18/2021 15	8.8	1.7	51.95	1.5	0.00	1228.7	93.3	6	1.5	0.237	0.74	Normal	1.4	1.6	0.65	0.7
02/18/2021 16	10.5	1.9	73.05	1.5	0.73	1791.7	157.5	8	1.3	0.670	1.44	Normal	1.4	1.6	1.16	0.8
02/18/2021 17	13.2	2.0	86.85	1.5	1.00	1981.3	163.5	9	1.1	3.747	4.91	Normal	1.3	1.6	3.67	1.8
02/18/2021 18	13.7	2.0	87.33	1.5	1.00	1982.9	162.0	9	1.1	3.773	3.89	Normal	1.2	1.4	2.87	2.6
02/18/2021 19	14.1	2.1	91.46	1.5	1.00	2021.2	164.2	9	1.1	4.395	5.45	Normal	1.1	1.4	3.97	3.5
02/18/2021 20	14.2	2.0	91.58	1.5	1.00	2014.6	163.4	9	1.1	4.288	4.72	Normal	1.1	1.4	3.44	3.4
02/18/2021 21	14.1	2.1	89.79	1.5	1.00	2008.5	162.8	9	1.1	4.189	4.52	Normal	1.1	1.4	3.29	3.6
02/18/2021 22	14.1	2.1	90.74	1.5	1.00	2023.4	164.4	9	1.1	4.431	4.96	Normal	1.1	1.4	3.61	3.4
02/18/2021 23	14.0	2.1	88.54	1.5	1.00	2002.9	161.9	9	1.1	4.098	4.26	Normal	1.1	1.4	3.10	3.3

Gateway Generating Facility

Antioch, CA

ABE4_P-12 Ammonia Slip Check

March 1, 2021

Hour	SCR NOx ppm 1-Hr	60-NOx ppm 1-Hr	NH3 Flow lb/hr 1-Hr	NOx ppm @15% O2 1-Hr	DB Gas On-Time 1-Hr	Combined Heat Input Rate mmBtu/hr 1-Hr	CT Megawatts 1-Hr	Megawatts - Gross Load Range	NH3 Molar Ratio 1-Hr	NH3 Slip Correction Factor 1 Hr	NH3 Slip ppm 1-Hr	Process Code 1-Hr	NH3 Molar Ratio 3-Hr Rolling	NH3 Molar Ratio 3-Hr Rolling Limit	NH3 ppm @15% O2 1-Hr	NH3 ppm @15% O2 3-Hr Rolling
03/01/2021 00	11.6	2.0	76.66	1.5	1.00	1889.7	160.2	9	1.2	2.261	3.80	Normal	1.2	1.4	2.91	3.3
03/01/2021 01	11.7	2.0	80.35	1.5	1.00	1938.1	165.5	9	1.2	3.046	5.57	Normal	1.2	1.4	4.27	3.3
03/01/2021 02	11.3	2.0	75.93	1.6	1.00	1889.3	162.6	9	1.2	2.254	3.90	Normal	1.2	1.4	3.03	3.4
03/01/2021 03	11.6	1.9	80.52	1.5	1.00	1954.4	167.7	9	1.2	3.311	5.83	Normal	1.2	1.4	4.47	3.9
03/01/2021 04	13.4	2.1	90.76	1.5	1.00	2052.3	170.8	10	1.1	4.900	7.25	Normal	1.2	1.4	5.35	4.3
03/01/2021 05	13.7	2.0	93.95	1.5	1.00	2053.0	171.4	10	1.1	4.911	7.51	Normal	1.1	1.4	5.54	**5.1**
03/01/2021 06	13.8	2.0	94.55	1.5	1.00	2050.0	171.3	10	1.1	4.863	7.44	Normal	1.1	1.4	5.49	**5.5**
03/01/2021 07	11.4	1.9	76.93	1.5	0.93	1864.4	160.0	9	1.2	1.850	3.66	Normal	1.1	1.4	2.80	4.6
03/01/2021 08	8.9	1.8	50.45	1.6	0.00	1208.2	90.7	6	1.4	0.237	0.75	Normal	1.2	1.6	0.65	3.0
03/01/2021 09	8.9	1.7	48.39	1.5	0.00	1201.2	89.6	5	1.4	0.237	0.64	Normal	1.3	1.6	0.56	1.3
03/01/2021 10	13.8	6.5	44.32	6.7	0.00	865.4	54.3	5	1.5	0.237	0.77	######	1.4	1.6	0.80	0.7
03/01/2021 11	**Down**	**Down**	**Down**	**Down**	0.00	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	Down	**NSD**	1.6	**Down**	**NSD**
03/01/2021 12	19.7	14.6	14.89	33.1	0.00	324.8	4.2	1	0.8	0.237	0.00	Hot S/U	**NSD**	1.6	0.00	**NSD**
03/01/2021 13	29.2	27.4	38.72	30.5	0.00	844.5	45.0	4	4.7	0.237	1.65	Hot S/U	**NSD**	1.6	1.84	**NSD**
03/01/2021 14	9.3	1.4	56.45	1.2	0.00	1178.5	87.2	5	1.5	0.237	0.87	Normal	2.3	1.6	0.77	0.9
03/01/2021 15	9.5	1.8	53.97	1.5	0.00	1513.1	131.4	7	1.2	0.426	0.51	Normal	2.5	1.6	0.44	1.0
03/01/2021 16	9.6	1.7	60.66	1.4	0.00	1623.5	147.0	7	1.2	0.443	0.69	Normal	1.3	1.6	0.58	0.6
03/01/2021 17	11.1	2.0	67.97	1.6	0.58	1790.9	154.7	8	1.1	0.657	0.78	Normal	1.2	1.5	0.61	0.5
03/01/2021 18	13.9	2.1	86.13	1.5	1.00	1988.6	161.1	9	1.1	3.866	3.40	Normal	1.1	1.5	2.48	1.2
03/01/2021 19	14.0	2.1	87.46	1.5	1.00	1991.7	161.2	9	1.1	3.916	3.72	Normal	1.1	1.4	2.71	1.9
03/01/2021 20	14.1	2.1	89.29	1.5	1.00	1991.9	161.5	9	1.1	3.919	3.72	Normal	1.1	1.4	2.74	2.6
03/01/2021 21	14.1	2.1	88.94	1.5	1.00	1995.1	161.7	9	1.1	3.971	4.13	Normal	1.1	1.4	3.01	2.8
03/01/2021 22	14.0	2.1	89.81	1.5	1.00	2023.9	165.2	9	1.1	4.439	5.50	Normal	1.1	1.4	3.96	3.2
03/01/2021 23	12.6	2.0	80.00	1.5	1.00	1900.8	159.2	9	1.1	2.441	3.08	Normal	1.1	1.4	2.33	3.1

Gateway Generating Facility

Antioch, CA

ABE4_P-12 Ammonia Slip Check

March 17, 2021

Hour	SCR NOx ppm 1-Hr	60-NOx ppm 1-Hr	NH3 Flow lb/hr 1-Hr	NOx ppm @15% O2 1-Hr	DB Gas On-Time 1-Hr	Combined Heat Input Rate mmBtu/hr 1-Hr	CT Megawatts 1-Hr	Megawatts - Gross Load Range	NH3 Molar Ratio 1-Hr	NH3 Slip Correction Factor 1 Hr	NH3 Slip ppm 1-Hr	Process Code 1-Hr	NH3 Molar Ratio 3-Hr Rolling	NH3 Molar Ratio 3-Hr Rolling Limit	NH3 ppm @15% O2 1-Hr	NH3 ppm @15% O2 3-Hr Rolling
03/17/2021 00	13.8	2.0	89.63	1.5	1.00	1984.4	161.9	9	1.1	3.798	4.75	Normal	1.1	1.4	3.50	4.3
03/17/2021 01	12.5	2.0	81.13	1.5	0.90	1888.7	158.2	9	1.2	2.244	3.61	Normal	1.1	1.4	2.73	3.5
03/17/2021 02	10.9	1.9	77.61	1.5	0.52	1850.2	164.0	9	1.2	1.619	3.59	Normal	1.2	1.4	2.86	3.0
03/17/2021 03	13.7	2.0	92.90	1.5	1.00	2038.2	168.6	10	1.1	4.671	6.87	Normal	1.2	1.4	5.07	3.6
03/17/2021 04	13.6	2.0	92.14	1.5	1.00	2036.3	168.6	10	1.1	4.640	6.87	Normal	1.1	1.4	5.07	4.3
03/17/2021 05	13.6	1.9	97.86	1.4	1.00	2035.6	168.6	10	1.2	4.629	10.14	Normal	1.1	1.4	7.48	**5.9**
03/17/2021 06	12.3	1.9	84.54	1.5	1.00	1924.5	166.7	9	1.2	2.825	4.69	Normal	1.2	1.4	3.64	**5.4**
03/17/2021 07	9.4	1.8	69.84	1.5	0.03	1768.3	165.6	9	1.3	0.386	0.92	Normal	1.2	1.4	0.78	4.0
03/17/2021 08	9.2	1.8	61.51	1.5	0.00	1653.3	151.8	8	1.3	0.431	0.87	Normal	1.3	1.5	0.73	1.7
03/17/2021 09	9.0	1.8	48.91	1.5	0.00	1408.7	119.3	7	1.2	0.353	0.56	Normal	1.3	1.6	0.47	0.7
03/17/2021 10	9.2	1.8	49.13	1.5	0.00	1384.2	115.8	7	1.2	0.336	0.53	Normal	1.2	1.6	0.45	0.6
03/17/2021 11	8.9	1.8	48.90	1.5	0.00	1448.0	124.7	7	1.2	0.381	0.55	Normal	1.2	1.6	0.46	0.5
03/17/2021 12	9.0	1.8	48.74	1.5	0.00	1327.8	107.8	6	1.3	0.296	0.58	Normal	1.2	1.6	0.50	0.5
03/17/2021 13	9.2	1.8	59.81	1.5	0.00	1659.0	152.3	8	1.2	0.429	0.79	Normal	1.2	1.6	0.66	0.5
03/17/2021 14	9.2	1.8	64.14	1.5	0.00	1722.5	159.7	8	1.3	0.404	0.82	Normal	1.3	1.6	0.69	0.6
03/17/2021 15	9.0	1.8	51.32	1.5	0.00	1493.3	131.1	7	1.2	0.412	0.66	Normal	1.2	1.5	0.55	0.6
03/17/2021 16	9.6	1.9	59.11	1.6	0.38	1540.3	130.0	7	1.3	0.445	0.95	Normal	1.3	1.5	0.79	0.7
03/17/2021 17	13.5	2.0	86.58	1.5	1.00	1997.0	163.1	9	1.1	4.002	4.76	Normal	1.2	1.5	3.47	1.6
03/17/2021 18	14.0	2.1	89.58	1.5	1.00	2004.8	162.6	9	1.1	4.129	4.87	Normal	1.2	1.4	3.55	2.6
03/17/2021 19	13.8	2.1	89.05	1.5	1.00	2004.6	162.7	9	1.1	4.126	5.36	Normal	1.1	1.4	3.90	3.6
03/17/2021 20	13.8	2.1	89.25	1.5	1.00	2006.7	163.0	9	1.1	4.160	5.45	Normal	1.1	1.4	3.97	3.8
03/17/2021 21	13.6	2.0	89.81	1.5	1.00	2010.8	165.5	10	1.1	4.226	6.21	Normal	1.1	1.4	4.52	4.1
03/17/2021 22	9.3	1.8	69.89	1.5	0.07	1768.4	164.4	9	1.4	0.386	1.02	Normal	1.2	1.4	0.85	3.1
03/17/2021 23	9.3	1.8	69.52	1.5	0.00	1781.6	166.7	9	1.3	0.506	1.27	Normal	1.3	1.5	1.06	2.1

TABLE 1-3
SUMMARY OF AVERAGE AMMONIA RESULTS -
UNIT P12 (S-43/44)
JANUARY 11-12, 2021

Parameter	Averages				Permit Limit
	Min Load	Mid Load	Base Load	Max Load	
Process Data:					
Total Heat Input, MMBtu/hr	1,243.8	1,568.1	1,774.1	2,070.6	--
Gas Turbine Gross Output, MW	95.2	140.5	165.3	169.8	--
Stack Gas Data:					
O_2, % volume dry	14.0	13.8	13.8	12.7	--
Ammonia:					
ppm volume dry	0.61	0.73	0.85	1.12	--
ppm @ 15% O_2	0.52	0.61	0.71	0.81	5
New NH_3 Slip Correction Factor:	0.237	0.465	0.384	5.197	--

TABLE 4-23
NH_3 CORRECTION FACTOR RESULTS - UNIT P12 (S-43/44), MAXIMUM LOAD

Parameter:	1-NH3-2-Max	2-NH3-2-Max	3-NH3-2-Max	Average
Process Data [1]:				
NH_3 solution injection rate, lb/hr	87.82	86.93	86.37	87.04
lb NH_3 per lb of solution	0.293	0.293	0.293	0.293
Fuel flow rate, MMBtu/hr	2,073.6	2,070.3	2,067.8	2,070.6
NH_3 injected, equivalent as ppm vol. dry	12.63	12.49	12.44	12.52
Gaseous Emissions (Inlet) [1]:				
NO_X, ppm vol. dry	14.39	14.35	14.35	14.36
Gaseous Emissions (Outlet) [1]:				
O_2, % volume dry	12.7	12.8	12.8	12.8
NO_X, ppm vol. dry	2.07	2.06	2.06	2.06
Measured NH_3 slip, ppmvd @ 15% O_2	0.697	0.872	0.868	0.812
Plant NH_3 slip calculated, ppmvd @ 15% O_2 [2]	0.22	0.14	0.11	0.16
New NH_3 Slip Correction Factor:	--	--	--	**5.197**

[1] Process data and gaseous emissions data are derived from plant instrumentation. The following equations were used to calculate the NH_3 Slip Correction Factor.

[2] "Plant NH_3 slip calculated" is the raw calculation of ammonia slip with no correction factor, used in calculation of the new NH_3 Slip Correction Factor shown below.

Ammonia Slip Correction Factor Equation:

$$NH3SlipCorreationFactor(b) = \frac{(NH3SlipMeasured@15\%O2)}{(NH3SlipCalculated@15\%O2)}$$

Where:

$$NH3SlipCalculated@15\%O2 = (NH3injected - (NOxIn - NOxOut)) * \left[\frac{(20.9 - 15.0)}{(20.9 - O2)}\right]$$

Where:

$$NH3injected = \left[\frac{(NH3InjectionRate * a)}{(Q * 8710 * 4.4096E - 8)}\right] * \left[\frac{(20.9 - O2)}{20.9}\right]$$

Where:
a = Ammonia solution concentration (lb NH3 per lb solution)
b = Ammonia slip correction factor
Q = Fuel flow rate (MMBtu/hr)

Ammonia Correlation (Based on Annual ST Results)

Year	Unit P12						
	Source Test Date	Parameter	Min Load	Mid Load	Base Load	Max Load	Permit Limit ppm
2016	1/15/2016	Total Heat Input, MMBTU/hr	1,216	1,504	1,795	2,051	5
		NH3 Slip Correction Factor	0.425	0.934	1.144	2.344	
2017	1/20/2017	Total Heat Input, MMBTU/hr	1,259	1,500	1,859	2,030	5
		NH3 Slip Correction Factor	0.416	0.391	0.413	0.832	
2018	1/18/2018	Total Heat Input, MMBTU/hr	1,262	1,538	1,822	2,037	5
		NH3 Slip Correction Factor	0.393	0.399	0.455	1.148	
2019	1/25/2019	Total Heat Input, MMBTU/hr	*1,205*	*1,518*	*1,798*	*2,046*	5
		NH3 Slip Correction Factor	0.535	0.456	0.282	2.27	
2020	1/9/2020	Total Heat Input, MMBTU/hr	1,206	1,524	1,803	2,073	5
		NH3 Slip Correction Factor	0.131	0.383	0.189	0.43	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions →

1. ☐ **BREAKDOWN RELIEF: *District Use Only* BREAKDOWN REFERENCE #:**

2. ☒ **MONITOR EXCESS EMISSION or EXCURSION: *District Use Only* REFERENCE #:**

3. ☐ **MONITOR IS INOPERATIVE: *District Use Only* REFERENCE #:**

4. ☐ **PRESSURE RELIEF DEVICE (PRD): *District Use Only* PRD REFERENCE #:**

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)			
Company	PG&E Gateway Generating Station	Site #	18143
Address	3225 Wilbur Ave, Antioch, CA 94509	Source #	P-12
Reported by	Tim Wisdom	Phone #	925-200-4811
Indicated Excess	Ammonia Slip	Fax #	
Allowable Limit	5.0 ppm at 15% O2	Averaging Time	3-hour
Start Time/Date	7:00 AM/2-18-2021, 5:00 AM/3-1-2021, 5:00 AM/3-17-2021	Clear Time	See Event Description
Monitor/device type(s)	☐ ▶CEM ☐ ▶GLM ☐ ▶Parametric ☐ ▶PRD ☒ ▶Non-monitor		
Monitor description(s)			

Parameter(s) exceeded or not functioning due to inoperation

☐ ▶NO_x ☐ ▶SO_2 ☐ ▶CO ☐ ▶CO_2 ☐ ▶H_2S ☐ ▶TRS ☒ ▶NH_3
☐ ▶O_2 ☐ ▶H_2O ☐ ▶Opacity ☐ ▶Lead ☐ ▶Gauge Pressure ☐ ▶Flow
☐ ▶Hydrocarbon Breakthrough (VOC) ☐ ▶Temperature ☐ ▶Wind Speed
☐ ▶Wind Direction ☐ ▶Steam ☐ ▶Other (describe)

Unit(s) of Measurement

☐ ▶ppm ☐ ▶ppb ☐ ▶min/hr > 20% ☐ ▶inches H_2O ☐ ▶mmHg
☐ ▶psig ☐ ▶pH ☐ ▶^{0}Fahrenheit ☒ ▶Other (describe) Calculated Values

Event Description:

Upon examination of CEMS-DAHS data, an excess emission on calculated ammonia slip was detected yesterday (4-15-2021) on Unit P-12 on the following dates/times: 2-18-2021/7:00 AM to 7:59 AM, 3-1-2021/5:00 AM to 5:59 AM, and 3-17-2021/5:00 AM to 5:59 AM (See attached CEMS-DAHS report printout). This detection of exceedance was a result of a new set of ammonia corrections factors, that were uploaded in the CEMS-DAHS database on 4-14-2021, being applied retroactively to the date for when the new correction factors were calculated at the conclusion of the annual source test for the unit on 01-15-2021. The corresponding 3-hour average mole (molar) ratio values for the same events, however, were below the indicated permit limit (See attached CEMS-DAHS report printout).

District Use Only		
Received by	Date	Time

General Instructions

- ✓ Check the Box numbers 1- 4 that apply to the RCA you are trying to report or request and read the detailed instructions.
- ✓ You will receive an ID # for each RCA you submit. In the case of a request for Breakdown Relief where multiple monitors are affected, you do not need to submit multiple forms, as long as all necessary information is given on one form. RCA reported during other than core business hours will be assigned an ID # the following working day. If you do not receive an ID #, it is your responsibility to contact the BAAQMD to get one.
- ✓ You may submit only one request for breakdown relief per form. However, you may submit multiple indicated excess, inoperative monitors and PRD reports on one form, provided that the start and end times given for the events in the required information section is inclusive of all events. Information on parameters exceeded, units of measurement and allowable limits can be provided in the event description box or when contacted by District staff with questions.
- ✓ Fill out the "Site Information and Description Information Required" areas of this form and email to *rca@baaqmd.gov*
- ✓ **A 30-day written follow-up report is required for Breakdown Requests and PRD Releases**. Reports for these types of RCA must contain a quantification of emissions, the calculations used to derive the emissions, and their duration. Reference Breakdown Admissions Advisory dated 12/3/04. Send 30-day report letters to: BAAQMD Compliance and Enforcement Division, MAILSTOP: RCA 30-DAY REPORT, 375 Beale Street, Ste. 600 San Francisco, CA 94105. NOTE: **You may have additional report requirements under Title V.**

Detailed Instructions

Box 1: To Request Breakdown Relief (Regulations 1-112, 1-113, 1-208, 1-431, 1-432)

If you have an equipment malfunction (e.g.; breakdown) that leads to the release of air pollutants above the regulatory or your permitted levels, you may request relief from BAAQMD enforcement action.

- Check Box #1.
- **NOTE:** Start and end times given for these events in the required information section must be inclusive of all events.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Requests for breakdown relief may not be withdrawn and must be called in or faxed to the BAAQMD immediately upon discovery of an equipment malfunction.
- Receipt of an RCA ID# for a breakdown does not mean relief has been granted. An Inspector will visit your facility to determine compliance.

Box 2: Monitor Indicates Excess Emission or Excursion (Regulation 1-522.7, 1-523.3, 1-542)

When a BAAQMD-required monitor indicates an excess or excursion, you must report it to the BAAQMD.

- Check Box #2.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Any excess emission indicated by a CEM or excursion of a parametric monitor, shall be reported to the BAAQMD within 96 hours.
- Area concentration excesses over the limits prescribed in District regulations shall be reported to the BAAQMD within the next normal working day following the examination of data.

Box 3: Monitor Is Inoperative (Regulations 1-522, 1-523, 1-530)

When a BAAQMD-required monitor is inoperative for greater than 24 hours, you must report it to the BAAQMD.

- Check Box #3 only if inoperative for greater than 24 hours.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All reports of inoperative monitors must be reported by the following BAAQMD working day and additionally be cleared by a notification of resumption of monitoring. To notify the BAAQMD regarding the resumption of monitoring, do not send in a separate RCA form; call (415) 749-4979 and give the RCA ID #, date, and the time of resumption.
- Inoperative monitors (except parametric monitors) with downtime greater than 15 days must furnish proof of expedited repair in a follow-up report.

Box 4: Pressure Relief Device (PRD) Is Released (Regulation 8-28-401)

When a PRD at your refinery/chemical plant vents to the atmosphere, you must report it to the BAAQMD.

- Check Box #4 only if a pressure relief device is released.
- Separate RCA ID #'s can be applied to monitor(s) affected by a PRD by also checking Box #2 if other monitors record an excess or excursion.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All PRD release reports must be reported by the following BAAQMD working day.

Attachment 2

Summary of Historical Correction Factors

Attachment 2

Summary of Historical Correction Factors from Source Tests for P-12

Year	Unit P12					
	Source Test Date	Parameter	Min Load	Mid Load	Base Load	Max Load
2017	1/20/2017	Total Heat Input, MMBTU/hr	1,259	1,500	1,859	2,030
		NH3 Slip Correction Factor	0.416	0.391	0.413	0.832
2018	1/18/2018	Total Heat Input, MMBTU/hr	1,262	1,538	1,822	2,037
		NH3 Slip Correction Factor	0.393	0.399	0.455	1.148
2019	1/25/2019	Total Heat Input, MMBTU/hr	*1,205*	*1,518*	*1,798*	*2,046*
		NH3 Slip Correction Factor	0.535	0.456	0.282	2.27
2020	1/9/2020	Total Heat Input, MMBTU/hr	1,206	1,524	1,803	2,073
		NH3 Slip Correction Factor	0.131	0.383	0.189	0.43
2021	1/15/2021	Total Heat Input, MMBTU/hr	1,244	1,565	1,774	2,071
		NH3 Slip Correction Factor	0.237	0.465	0.384	5.197

Attachment 3

Attachment 3: Tim Underwood Email of 04/26/2016, Re: The Recent Turbine Test Report

From: Tim Underwood
To: Espiritu, Angel
Cc: Furman, Diana
Subject: RE: The recent turbine test report
Date: Thursday, April 28, 2016 4:21:12 PM
Attachments: OS-6197 thru 6204 replacement tables.pdf
OS-6197 thru 6204 replacement tables.xlsx

Will do. I've prepared the attached replacement pages though the memo has not yet been drafted. The Excel sheet makes it easier to move things around.--tim

---

From: Espiritu, Angel B [mailto:ABE4@pge.com]
Sent: Thursday, April 28, 2016 10:21 AM
To: Tim Underwood <tunderwood@baaqmd.gov>
Cc: Furman, Diana <DMWR@pge.com>
Subject: RE: The recent turbine test report

Thank you Tim. Please note also that starting May, I will be working on rotation assignment outside of Gateway Generating Station. In my absence, Diana Furman will manage environmental compliance at Gateway. Please direct your communication to her on this subject. (DMWR@pge.com, tel.: 925-522-7838), but please copy me each time. Thank you.

Angel B. Espiritu
Sr. Environmental Consultant
(Environmental Compliance Manager at PG&E - Gateway Generating Station)
3225 Wilbur Avenue, Antioch, CA 94509
925-522-7838 (Work), 510-861-1597 (Cell)

From: Tim Underwood [mailto:tunderwood@baaqmd.gov]
Sent: Thursday, April 28, 2016 10:06 AM
To: Espiritu, Angel B
Subject: RE: The recent turbine test report

Not at present. But do be aware that the reaction ratio of NH3 to NOx determined at your turbines was not so near 1.0 as I originally was led to believe. It was too conveniently close to what I wanted it to be, I suppose. I maintain that the ratio is still the proper quantity to determine, but it does not perfectly fit the standard design model. That is likely due (mainly) to alternate reaction mechanisms.

I'll be in touch with a revision shortly—likely even by Wednesday of next week.

Tim

From: Espiritu, Angel B [mailto:ABE4@pge.com]
Sent: Thursday, April 28, 2016 9:52 AM
To: Tim Underwood <tunderwood@baaqmd.gov>
Subject: RE: The recent turbine test report

Hi Tim,

Thank you for the info. Is there anything that you need us to do?

Angel

From: Tim Underwood [mailto:tunderwood@baaqmd.gov]
Sent: Thursday, April 28, 2016 9:43 AM
To: Espiritu, Angel B
Subject: The recent turbine test report

Angel,

Sadly, I have to inform you that my original published review disposition memo of the recent Avogadro report has been rescinded. I have contacted Craig Thiry of Montrose Environmental and he is committed to rectifying the situation. I've attached the revocation memo. I will send you the revised review disposition memo when that is composed. That could take a while because I have to recompile all of the data for at least eight tables.

Tim

Prepared by BAAQMD Source Test

Table 6-1 Data				
	OS-6197	OS-6197	OS-6197	
Date	11-Jan	11-Jan	11-Jan	
Time	914-944	952-1022	1036-1106	Average
MMBtu/hr	1171	1171	1170	1171
NH3 aqueous, lbs/hr	59.5	55.5	52.7	55.9
O2%	14.0	14.0	14.0	14.0
NH3, ppm (out)	0.17	0.86	1.01	0.68
Calculated from parameters above				
NH3, lbs/MMBtu (out)	0.000198	0.001000	0.001174	0.000791
NH3 lbs/hr (out)	0.231	1.171	1.374	0.925
NH3 mole/hr (in)	1.028	0.959	0.911	0.966
NH3 mole/hr (out)	0.014	0.069	0.081	0.054
NH3 mole/hr (reacted)	1.015	0.891	0.831	0.912
NOx inlet/outlet data: provided by GGS and reported by Avogadro on indicated Table				
Table 6-16				
NOx in (SCR) moles/hr	0.762	0.760	0.763	0.762
NOx out, lbs/hr	6.680	5.93	6.47	6.360
NOx, out ppm	1.810	1.610	1.750	1.723
Calculated from parameters above				
NOx out, moles/hr	0.145	0.129	0.141	0.138
NOx reacted, mole/hr	0.617	0.631	0.622	0.623

NH3 injection rate during this minimum load test is completely out of sync with the values determined at other loads on this turbine. A measurement or transcription error is strongly indicated, though the root cause cannot be determined from data contained in this report. A double check of plant data seems to confirm the 50+lbs/hr aquous ammonia injection rates.

Additionally, other data for this turbine better matches the performance data for turbine 2.

Best reaction values to use				
NH3 reacted, moles/hr	1.015	0.891	0.831	0.912
NOx reacted, mole/hr	0.617	0.631	0.622	0.623
NH3/NOx reaction ratio	**1.64**	**1.41**	**1.33**	**1.46**

Prepared by BAAQMD Source Test

	OS-6198	OS-6198	OS-6198	
Date	11-Jan	11-Jan	11-Jan	
Time	1119-1149	1157-1227	1235-1305	Average
MMBtu/hr	1497	1506	1499	1501
NH3 aqueous, lbs/hr	53.7	54.4	55.2	54.4
O2%	13.7	13.7	13.7	13.7
NH3, ppm (out)	1.16	1.17	1.14	1.16
Calculated from parameters above				
NH3, lbs/MMBtu (out)	0.001296	0.001311	0.001274	0.001294
NH3 lbs/hr (out)	1.940	1.974	1.909	1.941
NH3 mole/hr (in)	0.929	0.941	0.954	0.941
NH3 mole/hr (out)	0.114	0.116	0.112	0.114
NH3 mole/hr (reacted)	0.814	0.825	0.842	0.827
Table 6-12				
NOx in (SCR) moles/hr	0.962	0.956	0.955	0.958
NOx out, lbs/hr	7.800	8.520	8.270	8.197
NOx, out ppm	1.74	1.89	1.84	1.823
Calculated from parameters above				
NOx out, moles/hr	0.170	0.185	0.180	0.178
NOx reacted, mole/hr	0.792	0.771	0.775	0.779
Best reaction values to use				
NH3 mole/hr (reacted)	0.814	0.825	0.842	0.827
NOx reacted, mole/hr	0.792	0.771	0.775	0.779
NH3/NOx reaction ratio	**1.03**	**1.07**	**1.09**	**1.06**

Prepared by BAAQMD Source Test

	OS-6199	OS-6199	OS-6199	
Date	11-Jan	11-Jan	11-Jan	
Time	1317-1347	1355-1425	1435-1505	Average
MMBtu/hr	1799	1793	1791	1794
NH3 aqueous, lbs/hr	75.5	76.1	76.9	76.2
O2%	13.7	13.7	13.7	13.7
NH3, ppm (out)	1.08	1.22	1.24	1.18
Calculated from parameters above				
NH3, lbs/MMBtu (out)	0.001198	0.001356	0.001380	0.001311
NH3 lbs/hr (out)	2.156	2.430	2.471	2.352
NH3 mole/hr (in)	1.306	1.316	1.330	1.317
NH3 mole/hr (out)	0.127	0.143	0.145	0.138
NH3 mole/hr (reacted)	1.179	1.173	1.185	1.179
Table 6-8				
NOx in (SCR) moles/hr	1.192	1.183	1.200	1.192
NOx out, lbs/hr	10.400	10.000	9.740	10.047
NOx, out ppm	1.940	1.870	1.820	1.877
Calculated from parameters above				
NOx out, moles/hr	0.226	0.217	0.212	0.218
NOx reacted, mole/hr	0.966	0.966	0.988	0.973
Best reaction values to use				
NH3 mole/hr (reacted)	1.179	1.173	1.185	1.179
NOx reacted, mole/hr	0.966	0.966	0.988	0.973
NH3/NOx reaction ratio	**1.22**	**1.21**	**1.20**	**1.21**

Prepared by BAAQMD Source Test

	OS-6200	OS-6200	OS-6200	
Date	12-Jan	12-Jan	12-Jan	
Time	1222-1252	1322-1352	1428-1458	Average
MMBtu/hr	2133	2130	2118	2127
NH3 aqueous, lbs/hr	94.6	95.2	92.9	94.2
O2%	12.8	12.8	12.7	12.8
NH3, ppm (out)	2.02	1.99	1.98	2.00
Calculated from parameters above				
NH3, lbs/MMBtu (out)	0.001993	0.001959	0.001947	0.001966
NH3 lbs/hr (out)	4.251	4.172	4.123	4.182
NH3 mole/hr (in)	1.636	1.646	1.607	1.630
NH3 mole/hr (out)	0.250	0.245	0.243	0.246
NH3 mole/hr (reacted)	1.386	1.400	1.365	1.384
Table 6-4				
NOx in (SCR) moles/hr	1.663	1.676	1.652	1.664
NOx out, lbs/hr	8.39	8.42	8.29	8.367
NOx, out ppm	1.490	1.500	1.480	1.490
Calculated from parameters above				
NOx out, moles/hr	0.182	0.183	0.180	0.182
NOx reacted, mole/hr	1.481	1.493	1.472	1.482
Highlighted values do not match other more reliable data contained in the report.				
NOx data measured or reported by Avogadro during RATA on indicated Table				
Table 6-29				
NOx out, ppm (Avogadro)	2.09	2.13	2.10	
NOx out, ppm (GGS CEMS)	2.07	2.09	2.07	
Table 6-31				
NOx out, lbs/hr (Avogadro)	11.94	12.08	11.84	
NOx out, lbs/hr (GGS CEMS)	11.677	11.73	11.51	
Calculated values from data above in this box				
NOx out, Avo moles/hr	0.260	0.263	0.257	
NOx out, GGS moles/hr	0.254	0.255	0.250	
Green highlighted values are considered reliable.				
Best reaction values to use				
NH3 mole/hr (reacted)	1.386	1.400	1.365	1.384
NOx reacted, mole/hr	1.403	1.413	1.395	1.404
NH3/NOx reaction ratio	**0.99**	**0.99**	**0.98**	**0.99**

Prepared by BAAQMD Source Test

	OS-6201	OS-6201	OS-6201	
Date	14-Jan	14-Jan	14-Jan	
Time	910-940	947-1017	1025-1055	Average
MMBtu/hr	1216	1215	1216	1216
NH3 aqueous, lbs/hr	44.5	43.6	43.8	43.9
O2%	13.9	14.0	13.9	13.9
NH3, ppm (out)	0.57	0.53	0.58	0.56
Calculated from parameters above				
NH3, lbs/MMBtu (out)	0.000653	0.000613	0.000669	0.000645
NH3 lbs/hr (out)	0.794	0.744	0.813	0.784
NH3 mole/hr (in)	0.769	0.754	0.757	0.760
NH3 mole/hr (out)	0.047	0.044	0.048	0.046
NH3 mole/hr (reacted)	0.722	0.710	0.709	0.714
Table 6-18				
NOx in (SCR) moles/hr	0.797	0.796	0.804	0.799
NOx out, lbs/hr	6.66	6.7	6.65	6.670
NOx, out ppm	1.750	1.760	1.750	1.753
Calculated from parameters above				
NOx out, moles/hr	0.145	0.146	0.145	0.145
NOx reacted, mole/hr	0.652	0.650	0.659	0.654
Best reaction values to use				
NH3 mole/hr (reacted)	0.722	0.710	0.709	0.714
NOx reacted, mole/hr	0.652	0.650	0.659	0.654
NH3/NOx reaction ratio	**1.11**	**1.09**	**1.08**	**1.09**

Prepared by BAAQMD Source Test

	OS-6202	OS-6202	OS-6202	
Date	13-Jan	13-Jan	13-Jan	
Time	1248-1318	1324-1354	1359-1429	Average
MMBtu/hr	1502	1506	1505	1504
NH3 aqueous, lbs/hr	46.4	46.1	44.4	45.6
O2%	13.7	13.7	13.7	13.7
NH3, ppm (out)	1.02	0.67	0.65	0.78
Calculated from parameters above				
NH3, lbs/MMBtu (out)	0.001136	0.000746	0.000724	0.000869
NH3 lbs/hr (out)	1.707	1.124	1.090	1.307
NH3 mole/hr (in)	0.802	0.798	0.768	0.789
NH3 mole/hr (out)	0.100	0.066	0.064	0.077
NH3 mole/hr (reacted)	0.702	0.731	0.704	0.712
Table 6-14				
NOx in (SCR) moles/hr	0.915	0.919	0.908	0.914
NOx out, lbs/hr	8.39	8.13	8.38	8.300
NOx, out ppm	1.840	1.780	1.840	1.820
Calculated from parameters above				
NOx out, moles/hr	0.182	0.177	0.182	0.180
NOx reacted, mole/hr	0.733	0.742	0.726	0.734
Best reaction values to use				
NH3 mole/hr (reacted)	0.702	0.731	0.704	0.712
NOx reacted, mole/hr	0.733	0.742	0.726	0.734
NH3/NOx reaction ratio	**0.96**	**0.99**	**0.97**	**0.97**

Prepared by BAAQMD Source Test

	OS-6203	OS-6203	OS-6203	
Date	13-Jan	13-Jan	13-Jan	
Time	1450-1520	1528-1558	1606-1636	Average
MMBtu/hr	1796	1794	1794	1795
NH3 aqueous, lbs/hr	58.6	58.0	57.1	57.9
O2%	13.7	13.7	13.7	13.7
NH3, ppm (out)	0.91	0.84	0.82	0.86
Calculated from parameters above				
NH3, lbs/MMBtu (out)	0.001014	0.000936	0.000914	0.000954
NH3 lbs/hr (out)	1.821	1.679	1.639	1.713
NH3 mole/hr (in)	1.013	1.003	0.987	1.001
NH3 mole/hr (out)	0.107	0.099	0.096	0.101
NH3 mole/hr (reacted)	0.906	0.904	0.891	0.901
Table 6-10				
NOx in (SCR) moles/hr	1.126	1.136	1.121	1.128
NOx out, lbs/hr	9.8	9.84	9.99	9.877
NOx, out ppm	1.800	1.800	1.830	1.810
Calculated from parameters above				
NOx out, moles/hr	0.213	0.214	0.217	0.215
NOx reacted, mole/hr	0.913	0.922	0.904	0.913
Best reaction values to use				
NH3 mole/hr (reacted)	0.906	0.904	0.891	0.901
NOx reacted, mole/hr	0.913	0.922	0.904	0.913
NH3/NOx reaction ratio	**0.99**	**0.98**	**0.99**	**0.99**

Prepared by BAAQMD Source Test

	OS-6204	OS-6204	OS-6204	
Date	14-Jan	15-Jan	15-Jan	
Time	1141-1202	1000-1030	1240-1310	Average
MMBtu/hr	2056	2044	2053	2051
NH3 aqueous, lbs/hr	77.4	77.8	78.3	77.8
O2%	12.7	12.7	12.7	12.7
NH3, ppm (out)	1.09	1.16	1.15	1.13
Calculated from parameters above				
NH3, lbs/MMBtu (out)	0.001066	0.001135	0.001125	0.001109
NH3 lbs/hr (out)	2.192	2.320	2.310	2.274
NH3 mole/hr (in)	1.339	1.345	1.355	1.346
NH3 mole/hr (out)	0.129	0.136	0.136	0.134
NH3 mole/hr (reacted)	1.210	1.209	1.219	1.212
* Orange highlight: Report published 14-Jan				
Table 6-6				
NOx in (SCR) moles/hr	1.538	1.531	1.529	1.533
NOx out, lbs/hr	11.2	11	11.3	11.167
NOx, out ppm	2.050	2.020	2.060	2.043
Calculated from parameters above				
NOx out, moles/hr	0.243	0.239	0.246	0.243
NOx reacted, mole/hr	1.295	1.292	1.283	1.290
NOx data measured or reported by Avogadro during RATA on indicated Table				
Table 6-37				
NOx out, ppm (Avogadro)	2.15	2.10	2.16	
NOx out, ppm (GGS CEMS)	2.05	2.02	2.06	
Table 6-39				
NOx out, lbs/hr (Avogadro)	11.78	11.43	11.74	
NOx out, lbs/hr (GGS CEMS)	11.17	11.03	11.27	
Calculated values from data above in this box				
NOx out, Avo moles/hr	0.256	0.248	0.255	
NOx out, GGS moles/hr	0.243	0.240	0.245	
Best reaction values to use				
NH3 mole/hr (reacted)	1.210	1.209	1.219	1.212
NOx reacted, mole/hr	1.282	1.283	1.274	1.279
NH3/NOx reaction ratio	**0.94**	**0.94**	**0.96**	**0.95**

From: Mariel Adler-McAllister
To: Espiritu, Angel
Subject: Re: 07Z15
Date: Tuesday, June 29, 2021 3:03:39 PM
Attachments: image001.jpg

Hello Angel,

I spoke to my supervisor regarding the 2021 source test data that was recently input and used to calculate the ammonia slip reported to the Air District under Episode 07Z15. It was determined that until the source tests results are reviewed and certified by the Air District Source Test Division, a facility shall NOT input and use this data to calculate emissions. Please continue to use the previous source test data (2020) until the 2021 ST data has been certified. For the moment we are discussing voiding the reported ammonia slip and re-addressing in the future once the 2021 source test has been reviewed by the Air District and the issue resolved. As stated in your 30-day report, there may be a mathematical error. Our source test department should catch this if true. I will also be contacting the ST department and notifying them of the calculated ammonia correction factor discrepancy. Once the Air District has determined the root cause of the high values associated with the ammonia correction factors, an enforcement determination will be made.

Best,

Mariel Adler-McAllister
Air Quality Inspector II
Compliance & Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105
Tel: 415-749-4713
Email: madlermcallister@baaqmd.gov

ATTACHMENT 3

30-Day Report on Reportable Compliance Activity Excess NOx Emission and Breakdown Relief Request (Episodes #07Z25 and #07Z31)

Pacific Gas and Electric Company®

Mailing Address:
Pacific Gas & Electric Company
Gateway Generating Station
3225 Wilbur Ave.
Antioch, CA 94509
(925) 522-7801

May 27, 2021

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

Subject: Facility #B8143: 30-Day Report on RCA Episode #07Z25 and Episode #07Z31

Dear Sir/Madam,

In compliance with the Bay Area Air Quality Management District (BAAQMD) Permit Condition 18138 Part 35 and Section I.F of the Title V Permit, the PG&E Gateway Generating Station (GGS) is submitting this 30-Day Follow Up Report on RCA with episode reference ID numbers #07Z25 (Equipment Breakdown Relief Request) and #07Z31 (Excess NOx Emission Event).

The GGS leaders and staff conducted an investigation of the event referenced above and are hereby reporting the results as follows.

At approximately 12:36 AM of April 28, 2021, the NOx emission concentration started to increase and continued to increase after additional ammonia was supplied. The NOx concentration reversed its trend at approximately 12:53 AM when the Duct Burner was shutdown, and generation operations continued. The trend of increasing NOx concentration was observed again at approximately 1:05 AM. The Unit was shut down at approximately 1:24 AM.

It was determined that there was a tube leak within the Heat Recovery Steam Generator (HRSG) structure and was leaking steam in the Selective Catalytic Reduction (SCR) system. This leak impacted the NOx abatement system by diluting the concentration of the ammonia that flows into the SCR, thereby causing the SCR system to fail in reducing the NOx emission concentration to its permit compliance level. This event resulted in 1-hr average corrected NOx of 2.1 parts per million (ppm) for the period 12:00 AM to 12:59 AM. Please refer to the attached 10-Day Follow Up Report for CEMS-DAHS data report printout. Please note that the CEMS-DAHS clock runs on Standard Time.

After a thorough inspection of the impacted equipment, it was determined that the tube leak in the HRSG was caused by a severed drainpipe fitting. Inside the HRSG, the high-pressure superheat (HPSH) bundle consists of about 70-feet long runs from the top of the HRSG to the drain located near the lower section of the HRSG. The HPSH bundle, with a design temperature of 1056 degrees Fahrenheit, expands downward at about 5.74 inches during normal operation. As the HPSH bundle heats up or cools down, the drain pipe goes up and down. A U-bolt support, installed during the initial construction of the plant, provides the lateral guide for the drainpipe as it moves up and down. During the event in this reported episode, the drainpipe got stuck up in the U-bolt support, and did not travel. This resulted in the deformation of the drainpipe and the failure at the drain to header weld.

As a corrective measure, a thorough review of the drain piping design was performed. The U-bolt guide support was determined to be unnecessary for the installation. The U-bolt guide has since been removed

from both HRSG Unit-A and HRSG Unit-B. The drain-pipes were re-leveled, and the hanger supports at the downstream were adjusted. The generation Unit-A was run briefly on April 30, 2021 and achieved emission compliance. The test confirmed that implemented corrective measure worked effectively.

This 30-Day report is also being copied to the Compliance Project Manager of the California Energy Commission.

If you have any questions regarding this submittal, please feel free to call me or Angel Espiritu at (510) 861-1597, (925) 522-7838.

Sincerely,

Tim Wisdom

Tim Wisdom
Senior Plant Manager

Enclosure: a/s

Cc: John Heiser
Compliance Project Manager
California Energy Commission

Pacific Gas and Electric Company®

Mailing Address:
Pacific Gas & Electric Company
Gateway Generating Station
3225 Wilbur Ave.
Antioch, CA 94509
(925) 522-7801

May 4, 2021

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

Subject: ~~Facility #B8143: 10-Day Report on RCA #07Z25 and #07Z31~~

Dear Sir/Madam,

In compliance with the Bay Area Air Quality Management District Permit Condition 18138 Part 35 and Section I.F. of the Title V Permit, the PG&E Gateway Generating Station is submitting the attached 10-Day Report on RCA with reference ID numbers #07Z25 and #07Z31.

At approximately 12:36 AM of April 28, 2021, the NOx emission concentration started to go up and continued to increase even when additional ammonia was supplied. The NOx concentration reversed its trend at approximately 12:53 AM when the Duct Burner was shutdown. The trend in NOx concentration resumed to increase again at approximately 1:05 AM. The Unit was shutdown at approximately 1:24 AM. Investigation of the event revealed that there was a tube leak within the Heat Recovery Steam Generator (HRSG) structure and was leaking steam in the Selective Catalytic Reduction (SCR) system. This leak impacted the NOx abatement system by diluting the concentration of the ammonia that flows into the SCR, thereby causing the SCR system to fail in reducing the NOx emission concentration to a level below the permit compliance limit. This event resulted in 1-hr average corrected NOx of 2.1 parts per million (ppm) for the period 12:00 AM to 12:59 AM. Please see the CEMS report printout in the attached modified RCA that was submitted on April 30, 2021. The initial RCA was submitted on April 28, 2021. Please note that the CEMS data were recorded in Standard time.

This 10-Day report is also being copied to the Compliance Project Manager of the California Energy Commission.

If you have any questions regarding this submittal, please feel free to call me or Angel Espiritu at (510) 861-1597, (925) 522-7838.

Sincerely,

Tim Wisdom

Tim Wisdom
Senior Plant Manager

Enclosure: a/s

Cc: John Heiser
Compliance Project Manager
California Energy Commission

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form
Reportable Compliance Activity (RCA)

See back of form for instructions →

1. [X] **BREAKDOWN RELIEF:** ***District Use Only*** **BREAKDOWN REFERENCE #:**

2. [X] **MONITOR EXCESS EMISSION or EXCURSION:** ***District Use Only*** **REFERENCE #:**

3. [ ] **MONITOR IS INOPERATIVE:** ***District Use Only*** **REFERENCE #:**

4. [ ] **PRESSURE RELIEF DEVICE (PRD):** ***District Use Only*** **PRD REFERENCE #:**

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)			
Company	PG&E Gateway Generating Station	Site #	18143
Address	3225 Wilbur Ave., Antioch, CA 94509	Source #	P-11
Reported by	Tim Wisdom	Phone #	925-200-4811
Indicated Excess	NOx-1 Hr	Fax #	
Allowable Limit	2.5 (PTO), 2.0 (Consent Decree)	Averaging Time	1-hour
Start Time/Date	12:00 AM -12:59 AM/04-28-27	Clear Time	(See description)

Monitor/device type(s): [X] ▶CEM [ ] ▶GLM [ ] ▶Parametric [ ] ▶PRD [ ] ▶Non-monitor

Monitor description(s):

Parameter(s) exceeded or not functioning due to inoperation

[X] ▶NO_x [ ] ▶SO_2 [ ] ▶CO [ ] ▶CO_2 [ ] ▶H_2S [ ] ▶TRS [ ] ▶NH_3
[ ] ▶O_2 [ ] ▶H_2O [ ] ▶Opacity [ ] ▶Lead [ ] ▶Gauge Pressure [ ] ▶Flow
[ ] ▶Hydrocarbon Breakthrough (VOC) [ ] ▶Temperature [ ] ▶Wind Speed
[ ] ▶Wind Direction [ ] ▶Steam [ ] ▶Other (describe)

Unit(s) of Measurement

[ ] ▶ppm [ ] ▶ppb [ ] ▶min/hr > 20% [ ] ▶inches H_2O [ ] ▶mmHg
[ ] ▶psig [ ] ▶pH [ ] ▶^{0}Fahrenheit [ ] ▶Other (describe)

Event Description:

At approximately 12:36 AM of April 28, 2021, the corrected (minute) NOx started to trend upward and continued increasing even when additional ammonia was supplied. The trend reversed at approximately 12:53 AM when the Duct Burner was shutdown. The increasing trend resumed at approximately 1:05 AM. Shortly after, a decision was made to shut down the Unit to investigate further on the cause. The Unit was shutdown at approximately 1:24 AM. Initial investigation revealed that there was a possible tube leak within the Heat Recovery Steam Generator (HRSG) structure and was leaking steam in the SCR system which may have impacted the NOx abatement system, thereby causing the NOx emission concentration to trend up. This event resulted in a 1-hr average corrected NOx of 2.1 for the period 12:00 AM to 12:59 AM. (See attached CEMS printout. Please note that the CEMS data were recorded in Standard time.)

T.W. Apr. 28, 2021

District Use Only		
Received by	Date	Time

General Instructions

- ✓ Check the Box numbers 1- 4 that apply to the RCA you are trying to report or request and read the detailed instructions.
- ✓ You will receive an ID # for each RCA you submit. In the case of a request for Breakdown Relief where multiple monitors are affected, you do not need to submit multiple forms, as long as all necessary information is given on one form. RCA reported during other than core business hours will be assigned an ID # the following working day. If you do not receive an ID #, it is your responsibility to contact the BAAQMD to get one.
- ✓ You may submit only one request for breakdown relief per form. However, you may submit multiple indicated excess, inoperative monitors and PRD reports on one form, provided that the start and end times given for the events in the required information section is inclusive of all events. Information on parameters exceeded, units of measurement and allowable limits can be provided in the event description box or when contacted by District staff with questions.
- ✓ Fill out the "Site Information and Description Information Required" areas of this form and email to *rca@baaqmd.gov*
- ✓ **A 30-day written follow-up report is required for Breakdown Requests and PRD Releases**. Reports for these types of RCA must contain a quantification of emissions, the calculations used to derive the emissions, and their duration. Reference Breakdown Admissions Advisory dated 12/3/04. Send 30-day report letters to: BAAQMD Compliance and Enforcement Division, MAILSTOP: RCA 30-DAY REPORT, 375 Beale Street, Ste. 600 San Francisco, CA 94105. NOTE: **You may have additional report requirements under Title V.**

Detailed Instructions

Box 1: To Request Breakdown Relief (Regulations 1-112, 1-113, 1-208, 1-431, 1-432)

If you have an equipment malfunction (e.g.; breakdown) that leads to the release of air pollutants above the regulatory or your permitted levels, you may request relief from BAAQMD enforcement action.

- Check Box #1.
- **NOTE:** Start and end times given for these events in the required information section must be inclusive of all events.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Requests for breakdown relief may not be withdrawn and must be called in or faxed to the BAAQMD immediately upon discovery of an equipment malfunction.
- Receipt of an RCA ID# for a breakdown does not mean relief has been granted. An Inspector will visit your facility to determine compliance.

Box 2: Monitor Indicates Excess Emission or Excursion (Regulation 1-522.7, 1-523.3, 1-542)

When a BAAQMD-required monitor indicates an excess or excursion, you must report it to the BAAQMD.

- Check Box #2.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Any excess emission indicated by a CEM or excursion of a parametric monitor, shall be reported to the BAAQMD within 96 hours.
- Area concentration excesses over the limits prescribed in District regulations shall be reported to the BAAQMD within the next normal working day following the examination of data.

Box 3: Monitor Is Inoperative (Regulations 1-522, 1-523, 1-530)

When a BAAQMD-required monitor is inoperative for greater than 24 hours, you must report it to the BAAQMD.

- Check Box #3 only if inoperative for greater than 24 hours.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All reports of inoperative monitors must be reported by the following BAAQMD working day and additionally be cleared by a notification of resumption of monitoring. To notify the BAAQMD regarding the resumption of monitoring, do not send in a separate RCA form; call (415) 749-4979 and give the RCA ID #, date, and the time of resumption.
- Inoperative monitors (except parametric monitors) with downtime greater than 15 days must furnish proof of expedited repair in a follow-up report.

Box 4: Pressure Relief Device (PRD) Is Released (Regulation 8-28-401)

When a PRD at your refinery/chemical plant vents to the atmosphere, you must report it to the BAAQMD.

- Check Box #4 only if a pressure relief device is released.
- Separate RCA ID #'s can be applied to monitor(s) affected by a PRD by also checking Box #2 if other monitors record an excess or excursion.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All PRD release reports must be reported by the following BAAQMD working day.

Unit P11 Excess Emissions Summary

Gateway Generating Facility

Excess Emissions for 4/27/2021 thru 4/28/2021: NOx ppm @15% O2 1-Hr

Reason	Duration
Not specified	1 hour

Duration of NOx ppm @15% O2 1-Hr excess emissions	1 hour
Source operating time	40 hours
Source operating time with excess emissions	2.5%

Unit P11 Excess Emissions

Gateway Generating Facility

Excess Emissions for 4/27/2021 thru 4/28/2021: NOx ppm @15% O2 1-Hr

Parameter	Start	End	Duration	Value	Min	Max	Limit	Reason	Action
NOx ppm @15% O2 1-Hr	4/27/2021 11:00 PM	11:59 PM	1 hour	2.1	2.1	2.1	2.0	*Not specified*	
Total duration			1 hour						

Gateway Generating Station

Antioch, CA

Cedar 1 Minute Data - UNIT P11

April 27, 2021 - Hour 23

Minute	60-NOx ppm 1-Min	NOx ppm @15% O2 1-Min	60-NOx lb/mmBtu 1-Min	NOx lb/hr 1-Min Avg	CO ppm @15% O2 1 Min	CO lb/hr 1-Min Avg	60-O2% 1-Min	Stack Flow kdscf/hr 1-Min	CT Gas Flow hscf/hr 1-Min	DB Gas Flow kscf/hr 1-Min	DB Gas Flow hscf/hr Crnt-Hr
23:00	2.35	1.76	0.0065	12.70	0.07	0.39	13.00	#######	16396.8	245.49	2454.9
23:01	2.39	1.78	0.0066	12.62	0.07	0.38	12.99	#######	15992.3	245.72	2456.1
23:02	2.52	1.88	0.0069	12.97	0.06	0.19	13.01	#######	15676.9	245.35	2455.2
23:03	2.61	1.95	0.0072	13.62	0.05	0.19	13.00	#######	15790.1	245.20	2454.4
23:04	2.56	1.91	0.0070	13.30	0.07	0.38	13.00	#######	15871.0	245.35	2454.2
23:05	2.56	1.91	0.0070	13.26	0.09	0.38	13.01	#######	15822.5	245.55	2454.4
23:06	2.54	1.90	0.0070	12.76	0.09	0.37	13.02	#######	15304.8	228.04	2429.6
23:07	2.33	1.74	0.0064	11.22	0.07	0.35	12.98	#######	15264.3	164.61	2331.6
23:08	1.88	1.44	0.0053	9.37	0.10	0.35	13.18	#######	15450.4	161.05	2251.5
23:09	2.14	1.68	0.0062	11.04	0.11	0.35	13.38	#######	15579.8	160.97	2187.3
23:10	2.25	1.77	0.0065	11.52	0.12	0.53	13.40	#######	15498.9	160.76	2134.6
23:11	2.23	1.76	0.0065	11.33	0.12	0.53	13.41	#######	15296.7	150.89	2082.5
23:12	2.17	1.71	0.0063	10.99	0.13	0.53	13.41	#######	15304.8	151.41	2038.8
23:13	2.16	1.71	0.0063	11.05	0.13	0.53	13.44	#######	15466.6	145.34	1997.0
23:14	2.20	1.74	0.0064	11.24	0.13	0.52	13.45	#######	15490.8	144.10	1959.9
23:15	2.20	1.75	0.0064	11.28	0.13	0.52	13.49	#######	15547.4	144.02	1927.4
23:16	2.26	1.80	0.0066	11.66	0.13	0.53	13.48	#######	15612.2	143.95	1898.7
23:17	2.28	1.81	0.0067	11.85	0.14	0.53	13.48	#######	15620.2	143.96	1873.2
23:18	2.29	1.82	0.0067	11.86	0.14	0.53	13.49	#######	15628.3	143.95	1850.4
23:19	2.30	1.83	0.0067	11.84	0.15	0.53	13.49	#######	15612.2	143.95	1829.8
23:20	2.31	1.84	0.0068	12.03	0.13	0.53	13.49	#######	15628.3	143.88	1811.2
23:21	2.34	1.86	0.0068	12.00	0.14	0.52	13.49	#######	15587.9	143.95	1794.3
23:22	2.35	1.87	0.0069	12.20	0.13	0.53	13.49	#######	15620.2	143.80	1778.8
23:23	2.34	1.86	0.0068	12.00	0.14	0.52	13.49	#######	15587.9	143.88	1764.7
23:24	2.33	1.86	0.0068	11.98	0.15	0.52	13.49	#######	15563.6	143.88	1751.6
23:25	2.34	1.86	0.0068	12.02	0.14	0.53	13.49	#######	15620.2	143.75	1739.5
23:26	2.34	1.86	0.0068	12.08	0.15	0.53	13.49	#######	15701.1	143.74	1728.3
23:27	2.36	1.88	0.0069	12.25	0.14	0.53	13.49	#######	15685.0	143.73	1718.0
23:28	2.39	1.91	0.0070	12.43	0.15	0.53	13.50	#######	15701.1	143.67	1708.3
23:29	2.41	1.92	0.0071	12.59	0.16	0.71	13.50	#######	15668.8	143.67	1699.2

Minute	60-NOx ppm 1-Min	NOx ppm @15% O2 1-Min	60-NOx lb/mmBtu 1-Min	NOx lb/hr 1-Min Avg	CO ppm @15% O2 1 Min	CO lb/hr 1-Min Avg	60-O2% 1-Min	Stack Flow kdscf/hr 1-Min	CT Gas Flow hscf/hr 1-Min	DB Gas Flow kscf/hr 1-Min	DB Gas Flow hscf/hr Crnt-Hr
23:30	2.41	1.92	0.0071	12.58	0.16	0.71	13.51	#######	15644.5	143.74	1690.8
23:31	2.40	1.92	0.0070	12.39	0.16	0.71	13.51	#######	15644.5	143.59	1682.8
23:32	2.42	1.93	0.0071	12.58	0.17	0.71	13.51	#######	15652.6	143.59	1675.3
23:33	2.44	1.95	0.0072	12.75	0.18	0.71	13.51	#######	15644.5	143.52	1668.3
23:34	2.45	1.95	0.0072	12.76	0.17	0.71	13.50	#######	15660.7	143.66	1661.6
23:35	2.49	1.99	0.0073	12.94	0.16	0.71	13.51	#######	15660.7	143.58	1655.4
23:36	2.52	2.01	0.0074	13.13	0.17	0.71	13.51	#######	15676.9	143.51	1649.4
23:37	2.52	2.01	0.0074	13.13	0.17	0.71	13.51	#######	15676.9	143.52	1643.8
23:38	2.54	2.03	0.0075	13.30	0.17	0.71	13.51	#######	15660.7	143.52	1638.4
23:39	2.55	2.03	0.0075	13.30	0.17	0.71	13.50	#######	15660.7	143.53	1633.3
23:40	2.70	2.16	0.0079	14.00	0.17	0.71	13.51	#######	15660.7	143.46	1628.5
23:41	3.45	2.75	0.0101	17.92	0.17	0.71	13.51	#######	15685.0	143.52	1623.9
23:42	3.65	2.91	0.0107	19.09	0.16	0.71	13.51	#######	15773.9	143.53	1619.5
23:43	3.57	2.85	0.0105	18.76	0.18	0.72	13.51	#######	15798.2	143.53	1615.3
23:44	3.47	2.77	0.0102	18.13	0.18	0.71	13.51	#######	15709.2	143.53	1611.3
23:45	3.38	2.70	0.0099	17.53	0.19	0.71	13.52	#######	15644.5	143.68	1607.5
23:46	3.19	2.54	0.0093	16.51	0.18	0.71	13.50	#######	15685.0	143.67	1603.9
23:47	3.16	2.52	0.0092	16.44	0.19	0.72	13.49	#######	15798.2	143.53	1600.4
23:48	3.22	2.57	0.0094	17.33	0.20	0.74	13.50	#######	16348.3	143.46	1597.0
23:49	3.42	2.72	0.0100	18.60	0.22	0.93	13.49	#######	16510.1	143.08	1593.7
23:50	3.42	2.71	0.0100	18.51	0.25	1.11	13.46	#######	16429.2	143.22	1590.5
23:51	3.25	2.58	0.0095	17.58	0.21	0.92	13.46	#######	16421.1	143.37	1587.5
23:52	3.34	2.66	0.0098	17.70	0.22	0.91	13.48	#######	16332.1	109.32	1578.2
23:53	2.92	2.33	0.0086	14.45	0.24	0.84	13.51	#######	16210.8	**Down**	1578.2
23:54	2.39	1.99	0.0073	12.31	0.21	0.84	13.80	#######	16267.4	**Down**	1578.2
23:55	2.17	1.91	0.0070	11.50	0.05	0.16	14.19	#######	15846.7	**Down**	1578.2
23:56	2.12	1.87	0.0069	10.98	0.03	0.16	14.22	#######	15345.2	**Down**	1578.2
23:57	1.97	1.73	0.0064	9.90	0.02	0.00	14.19	#######	14924.6	**Down**	1578.2
23:58	1.87	1.64	0.0060	9.38	0.02	0.00	14.17	#######	15078.3	**Down**	1578.2
23:59	1.83	1.60	0.0059	9.29	0.03	0.16	14.16	#######	15183.4	**Down**	1578.2

Gateway Generating Station

Antioch, CA

Cedar 1 Minute Data - UNIT P11

April 28, 2021 - Hour 0

Minute	60-NOx ppm 1-Min	NOx ppm @15% O2 1-Min	60-NOx lb/mmBtu 1-Min	NOx lb/hr 1-Min Avg	CO ppm @15% O2 1 Min	CO lb/hr 1-Min Avg	60-O2% 1-Min	Stack Flow kdscf/hr 1-Min	CT Gas Flow hscf/hr 1-Min	DB Gas Flow kscf/hr 1-Min	DB Gas Flow hscf/hr Crnt-Hr
00:00	1.85	1.63	0.0060	9.53	0.01	0.00	14.19	#######	15329.0	**Down**	**Down**
00:01	1.83	1.61	0.0059	9.37	0.03	0.16	14.18	#######	15320.9	**Down**	**Down**
00:02	1.83	1.61	0.0059	9.41	0.03	0.16	14.20	#######	15385.7	**Down**	**Down**
00:03	1.89	1.66	0.0061	9.90	0.04	0.16	14.20	#######	15652.6	**Down**	**Down**
00:04	1.97	1.73	0.0064	10.45	0.04	0.16	14.18	#######	15741.6	**Down**	**Down**
00:05	2.46	2.17	0.0080	13.45	0.04	0.17	14.20	#######	16218.8	**Down**	**Down**
00:06	3.18	2.80	0.0103	17.57	0.04	0.17	14.19	#######	16453.4	**Down**	**Down**
00:07	3.09	2.70	0.0099	16.85	0.04	0.17	14.15	#######	16413.0	**Down**	**Down**
00:08	2.78	2.43	0.0089	14.52	0.03	0.16	14.14	#######	15741.6	**Down**	**Down**
00:09	2.98	2.61	0.0096	14.85	0.04	0.15	14.17	#######	14916.5	**Down**	**Down**
00:10	2.62	2.29	0.0084	12.38	0.03	0.15	14.16	#######	14220.8	**Down**	**Down**
00:11	2.45	2.14	0.0079	11.11	0.03	0.14	14.15	#######	13565.6	**Down**	**Down**
00:12	2.58	2.24	0.0082	10.87	0.02	0.00	14.11	#######	12789.0	**Down**	**Down**
00:13	2.37	2.05	0.0075	9.45	0.01	0.00	14.07	#######	12158.1	**Down**	**Down**
00:14	2.21	1.94	0.0071	8.47	0.04	0.12	14.17	#######	11502.8	**Down**	**Down**
00:15	2.15	1.92	0.0071	7.93	0.23	0.56	14.30	#######	10774.8	**Down**	**Down**
00:16	1.97	1.79	0.0066	6.91	1.00	2.30	14.42	#######	10103.4	**Down**	**Down**
00:17	1.89	1.76	0.0065	6.32	3.31	7.20	14.56	#######	9383.5	**Down**	**Down**
00:18	2.64	2.52	0.0093	8.25	8.57	17.04	14.72	#######	8558.4	**Down**	**Down**
00:19	2.44	2.39	0.0088	7.11	15.51	28.03	14.88	#######	7789.9	**Down**	**Down**
00:20	11.80	11.96	0.0440	31.63	25.42	40.90	15.08	#######	6932.4	**Down**	**Down**
00:21	10.53	11.21	0.0412	24.60	67.47	90.17	15.36	#######	5759.5	**Down**	**Down**
00:22	15.18	18.47	0.0679	23.18	122.51	93.56	16.05	#######	3292.3	**Down**	**Down**
00:23	21.43	33.10	0.1217	11.13	90.43	18.49	17.08	#######	881.7	**Down**	**Down**
00:24	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:25	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:26	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:27	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:28	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**

Minute	60-NOx ppm 1-Min	NOx ppm @15% O2 1-Min	60-NOx lb/mmBtu 1-Min	NOx lb/hr 1-Min Avg	CO ppm @15% O2 1 Min	CO lb/hr 1-Min Avg	60-O2% 1-Min	Stack Flow kdscf/hr 1-Min	CT Gas Flow hscf/hr 1-Min	DB Gas Flow kscf/hr 1-Min	DB Gas Flow hscf/hr Crnt-Hr
00:29	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:30	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:31	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:32	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:33	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:34	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:35	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:36	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:37	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:38	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:39	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:40	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:41	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:42	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:43	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:44	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:45	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:46	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:47	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:48	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:49	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:50	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:51	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:52	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:53	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:54	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:55	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:56	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:57	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:58	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
00:59	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**

Gateway Generating Station

Antioch, CA

Cedar 1 Minute Data - UNIT P11

April 28, 2021 - Hour 1

Minute	60-NOx ppm 1-Min	NOx ppm @15% O2 1-Min	60-NOx lb/mmBtu 1-Min	NOx lb/hr 1-Min Avg	CO ppm @15% O2 1 Min	CO lb/hr 1-Min Avg	60-O2% 1-Min	Stack Flow kdscf/hr 1-Min	CT Gas Flow hscf/hr 1-Min	DB Gas Flow kscf/hr 1-Min	DB Gas Flow hscf/hr Crnt-Hr
01:00	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:01	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:02	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:03	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:04	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:05	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:06	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:07	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:08	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:09	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:10	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:11	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:12	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:13	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:14	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:15	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:16	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:17	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:18	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:19	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:20	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:21	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:22	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:23	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:24	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:25	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:26	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:27	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:28	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**

Minute	60-NOx ppm 1-Min	NOx ppm @15% O2 1-Min	60-NOx lb/mmBtu 1-Min	NOx lb/hr 1-Min Avg	CO ppm @15% O2 1 Min	CO lb/hr 1-Min Avg	60-O2% 1-Min	Stack Flow kdscf/hr 1-Min	CT Gas Flow hscf/hr 1-Min	DB Gas Flow kscf/hr 1-Min	DB Gas Flow hscf/hr Crnt-Hr
01:29	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:30	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:31	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:32	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:33	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:34	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:35	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:36	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:37	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:38	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:39	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:40	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:41	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:42	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:43	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:44	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:45	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:46	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:47	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:48	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:49	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:50	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:51	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:52	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:53	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:54	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:55	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:56	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:57	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:58	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**
01:59	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**	**Down**