



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

January 11, 2012

Mr. Gerardo Rios
Chief – Permits Office
U. S. EPA, Region IX
75 Hawthorne Street, Air 3
San Francisco, CA 94105

Subject: Pasadena City, Department of Water and Power (ID 800168) – Title V Permit
Revision

Dear Mr. Rios:

The Pasadena City Department of Water and Power operates a power plant in the city of Pasadena. It has proposed to revise its Title V permit under Application No. 528166 by the following actions.

Application #	Device #	Section #	Proposed Actions
528165	D9	H	Replacement of the power turbine for gas turbine GT1

This proposed permit revision is considered as a “minor permit revision” to its Title V permit. Because the proposed changes of conditions are related to clarification of existing permit conditions they do not require an engineering analysis. Attached for your review is the proposed Section D. With your receipt of the proposed Section D today, we will note that the EPA 45-day review period begins on January 11, 2011.

If you have any questions or need additional information regarding the proposed permit revision, please call Li Chen at (909) 396-2426.

Very truly yours,

Brian L. Yeh
Senior Manager
Mechanical, Chemical, and Public Services

cc: Charles Chang, Pasadena

BLY:AYL:JTY:LC
Attachments

FACILITY PERMIT TO OPERATE PASADENA CITY, DWP (EIS USE)

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 1: STORAGE TANKS					
System 3: 72 GLENARM AVE					
TANK, AMMONIA STORAGE, AQUEOUS AMMONIA 19% WT, WITH VAPOR RECOVERY SYSTEM, WIDTH: 30 FT ; DIAMETER: 8 FT A/N: 403552 Permit to Construct Issued: 11/26/02	D48				C157.2, E144.1, E193.1
Process 2: INTERNAL COMBUSTION					
System 1: TURBINES					
GAS TURBINE, GT-1, NATURAL GAS, CURTISS WRIGHT, MODEL MOD POD-30, WITH A PRATT WHITNEY FT4C POWER TURBINE, WITH STEAM OR WATER INJECTION, 298 MMBTU/HR WITH A/N: GENERATOR, 30.58 MW MAXIMUM LOAD, 22.5 MW BASE LOAD	D9	C50	NOX: MAJOR SOURCE**	CO: 2000 PPMV (5) [RULE 407, 4-2-1982]; NOX: 9 PPMV NATURAL GAS (3) [RULE 2009, 5-11-2001]; NOX: 162 PPMV (8) [40CFR 60 Subpart GG, 3-6-1981]; NOX: 283.341 LBS/MMSCF NATURAL GAS (1) [RULE 2012, 12-5-2003]; PM: 0.01 GRAINS/SCF (5A) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; PM: 0.1 GRAINS/SCF (5) [RULE 409, 8-7-1981]; PM: 11 LBS/HR (5B) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; SO2: 150 PPMV (8) [40CFR 60 Subpart GG, 3-6-1981]	A63.2, A99.7, A195.7, A327.1, C1.8, C19.1, D12.4, D29.5, D82.3, D372.1, E57.2, I331.1, K40.2

* (1) (1A) (1B) Denotes RECLAIM emission factor (2) (2A) (2B) Denotes RECLAIM emission rate
 (3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
 (5) (5A) (5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
 (7) Denotes NSR applicability limit (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (9) See App B for Emission Limits (10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE PASADENA CITY, DWP (EIS USE)

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 2: INTERNAL COMBUSTION					
SELECTIVE CATALYTIC REDUCTION, SERVING GT1, PEERLESS, WITH A CORMETECH CMHT-XPI CATALYST, WITH AMMONIA INJECTION, 706 CU.FT. A/N: 437716 Permit to Construct Issued: 04/26/05	C50	D9 C53		NH3: 5 PPMV (4) [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	A195.6, D12.6, D12.7, D12.8, D29.4, D232.1, E73.4, E179.1, E179.2
SELECTIVE CATALYTIC REDUCTION, SERVING GT1, PEERLESS, WITH A HALDOR TOPSOE DNX-630 CATALYST, WITH AMMONIA INJECTION, 477 CU.FT. A/N: 437716 Permit to Construct Issued: 04/26/05	C53	C50		NH3: 5 PPMV (4) [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	A195.6, D12.6, D12.7, D28.1, D29.4, D232.1, E73.4, E179.1, E179.2

- * (1) (1A) (1B) Denotes RECLAIM emission factor
- (3) Denotes RECLAIM concentration limit
- (5) (5A) (5B) Denotes command and control emission limit
- (7) Denotes NSR applicability limit
- (9) See App B for Emission Limits
- (2) (2A) (2B) Denotes RECLAIM emission rate
- (4) Denotes BACT emission limit
- (6) Denotes air toxic control rule limit
- (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
- (10) See section J for NESHAP/MACT requirements

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Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 2: INTERNAL COMBUSTION					
GAS TURBINE, GT-2, NATURAL GAS, CURTISS WRIGHT, MODEL MOD POD-30, WITH STEAM OR WATER INJECTION, 298 MMBTU/HR WITH A/N: 438040 Permit to Construct Issued: 04/26/05 GENERATOR, 30.58 MW MAXIMUM LOAD, 22.5 MW BASE LOAD	D10	C51	NOX: MAJOR SOURCE**	CO: 2000 PPMV (5) [RULE 407, 4-2-1982]; NOX: 9 PPMV NATURAL GAS (3) [RULE 2009, 5-11-2001]; NOX: 162 PPMV (8) [40CFR 60 Subpart GG, 3-6-1981]; NOX: 283.341 LBS/MMSCF NATURAL GAS (1) [RULE 2012, 12-5-2003]; PM: 0.01 GRAINS/SCF (5B) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; PM: 0.1 GRAINS/SCF (5) [RULE 409, 8-7-1981]; PM: 11 LBS/HR (5A) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; SO2: 150 PPMV (8) [40CFR 60 Subpart GG, 3-6-1981]	A63.2, A99.7, A195.7, A327.1, C1.8, C19.1, D12.4, D29.5, D82.3, D372.1, E57.2, I331.1, K40.2
SELECTIVE CATALYTIC REDUCTION, SERVING GT2, PEERLESS, WITH A CORMETECH CMHT-XPI CATALYST, WITH AMMONIA INJECTION, 706 CU.FT. A/N: 437718 Permit to Construct Issued: 04/26/05	C51	D10 C54		NH3: 5 PPMV (4) [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	A195.6, D12.6, D12.7, D12.8, D29.4, D232.1, E73.4, E179.1, E179.2

* (1) (1A) (1B) Denotes RECLAIM emission factor
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 (6) Denotes air toxic control rule limit
 (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
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Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 2: INTERNAL COMBUSTION					
SELECTIVE CATALYTIC REDUCTION, SERVING GT2, PEERLESS, WITH A HALDOR TOPSOE DNX-630 CATALYST, WITH AMMONIA INJECTION, 477 CU.FT. A/N: 437718 Permit to Construct Issued: 04/26/05	C54	C51		NH3: 5 PPMV (4) [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	A195.6, D12.6, D12.7, D28.1, D29.4, D232.1, E73.4, E179.1, E179.2

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The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 2: INTERNAL COMBUSTION					
GAS TURBINE, GT3, NATURAL GAS, GE, MODEL LM6000 SPRINT, SIMPLE CYCLE, WITH WATER INJECTION, 448 MMBTU/HR WITH A/N: 410609 Permit to Construct Issued: 05/14/03	D36	C38	NOX: MAJOR SOURCE**	CO: 6 PPMV NATURAL GAS (4) [RULE 1303(a)(1) -BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]; CO: 2000 PPMV (5) [RULE 407, 4-2-1982]; NOX: 5 PPMV NATURAL GAS (4) [RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]; NOX: 108 PPMV NATURAL GAS (8) [40CFR 60 Subpart GG, 3-6-1981]; NOX: 108.57 LBS/MMSCF NATURAL GAS (1) [RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]; PM: 0.01 GRAINS/SCF NATURAL GAS (5A) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; PM: 0.1 GRAINS/SCF NATURAL GAS (5) [RULE 409, 8-7-1981]; PM: 11 LBS/HR NATURAL GAS (5B) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]; SOX: 150 PPMV NATURAL GAS (8) [40CFR 60 Subpart GG, 3-6-1981]; VOC: 2 PPMV NATURAL GAS (4) [RULE 1303(a)(1) -BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	A63.1, A99.4, A99.5, A99.6, A195.1, A195.2, A195.3, A327.1, C1.6, C1.7, D29.1, D29.2, D82.1, D82.2, E193.1, I296.1, K40.2, K67.7

* (1) (1A) (1B) Denotes RECLAIM emission factor
 (3) Denotes RECLAIM concentration limit
 (5) (5A) (5B) Denotes command and control emission limit
 (7) Denotes NSR applicability limit
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 (2) (2A) (2B) Denotes RECLAIM emission rate
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FACILITY PERMIT TO OPERATE PASADENA CITY, DWP (EIS USE)

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The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 2: INTERNAL COMBUSTION					
GENERATOR, SERVING GT3, 47.3 MW					
CO OXIDATION CATALYST, SERVING GT3, VOL: 104 CU FT, ATS, MODEL ENGELHARD, HT: 320", WD: 223.5", DEPTH: 12" A/N: 403549 Permit to Construct Issued: 11/26/02	C38	D36 C39			
SELECTIVE CATALYTIC REDUCTION, SERVING GT3, ATS WITH ENGELHARD CATALYST, 1460 CU.FT.; WIDTH: 18 FT 7.5 IN; HEIGHT: 26 FT 8 IN; LENGTH: 4 FT 8 IN WITH A/N: 403549 Permit to Construct Issued: 11/26/02	C39	C38 S41		NH3: 5 PPMV (4) [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	A195.4, D12.6, D12.7, D12.8, D29.3, D232.1, E73.3, E179.1, E179.2, E193.1
AMMONIA INJECTION, GRID, SERVING SCR FOR GT3					
STACK, SERVING GT3, HEIGHT: 125 FT ; DIAMETER: 12 FT A/N: 410609 Permit to Construct Issued: 05/14/03	S41	C39			

- * (1) (1A) (1B) Denotes RECLAIM emission factor
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Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 2: INTERNAL COMBUSTION					
GAS TURBINE, GT4, NATURAL GAS, GE, MODEL LM6000 SPRINT, SIMPLE CYCLE, WITH WATER INJECTION, 448 MMBTU/HR WITH A/N: 410612 Permit to Construct Issued: 05/14/03	D42	C44	NOX: MAJOR SOURCE**	CO: 6 PPMV NATURAL GAS (4) [RULE 1303(a)(1) -BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]; CO: 2000 PPMV (5) [RULE 407, 4-2-1982]; NOX: 5 PPMV NATURAL GAS (4) [RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]; NOX: 108 PPMV NATURAL GAS (8) [40CFR 60 Subpart GG, 3-6-1981]; NOX: 108.57 LBS/MMSCF NATURAL GAS (1) [RULE 2012, 3-16-2001; RULE 2012, 12-5-2003]; PM: 0.01 GRAINS/SCF NATURAL GAS (5A) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; PM: 0.1 GRAINS/SCF NATURAL GAS (5) [RULE 409, 8-7-1981]; PM: 11 LBS/HR NATURAL GAS (5B) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]; SOX: 150 PPMV NATURAL GAS (8) [40CFR 60 Subpart GG, 3-6-1981]; VOC: 2 PPMV NATURAL GAS (4) [RULE 1303(a)(1) -BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	A63.1, A99.4, A99.5, A99.6, A195.1, A195.2, A195.3, A327.1, C1.6, C1.7, D29.1, D29.2, D82.1, D82.2, E193.1, I296.1, K40.2, K67.7

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The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 2: INTERNAL COMBUSTION					
GENERATOR, SERVING GT4, 47.3 MW					
CO OXIDATION CATALYST, SERVING GT4, VOL: 104 CU FT, HT: 320", WD: 223.5", DEPTH: 12" A/N: 403551 Permit to Construct Issued: 11/26/02	C44	D42 C45			
SELECTIVE CATALYTIC REDUCTION, SERVING GT4, ATS WITH ENGELHARD CATALYST, 1460 CU.FT.; WIDTH: 18 FT 7.5 IN; HEIGHT: 26 FT 8 IN; LENGTH: 4 FT 8 IN WITH A/N: 403551 Permit to Construct Issued: 11/26/02	C45	C44 S47		NH3: 5 PPMV (4) [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	A195.4, D12.6, D12.7, D12.8, D29.3, D232.1, E73.3, E179.1, E179.2, E193.1
AMMONIA INJECTION, GRID, SERVING SCR FOR GT4					
STACK, SERVING GT4, HEIGHT: 125 FT ; DIAMETER: 12 FT A/N: 410612 Permit to Construct Issued: 05/14/03	S47	C45			
System 3: OIL WATER SEPARATOR					
OIL WATER SEPARATOR, 15000 GALS/HR; WIDTH: 7 FT ; HEIGHT: 6 FT ; LENGTH: 15 FT A/N: 403553 Permit to Construct Issued: 11/26/02	D49				E193.1
Process 3: EXTERNAL COMBUSTION					

- * (1) (1A) (1B) Denotes RECLAIM emission factor (2) (2A) (2B) Denotes RECLAIM emission rate
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The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
Process 3: EXTERNAL COMBUSTION					
SELECTIVE CATALYTIC REDUCTION, WITH AMMONIA INJECTION, 706 CU.FT.; WIDTH: 24 FT ; HEIGHT: 13 FT 4 IN; LENGTH: 9 FT A/N: 330274 Permit to Construct Issued: 06/15/00	C35	D15		NH3: 10 PPMV (4) [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	A99.1, D12.3, D12.5, D28.1, D28.2, E73.2, E192.1, E262.1, K40.1, K67.5

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**FACILITY PERMIT TO OPERATE
PASADENA CITY, DWP (EIS USE)**

SECTION H: DEVICE ID INDEX

**The following sub-section provides an index
to the devices that make up the facility
description sorted by device ID.**

**FACILITY PERMIT TO OPERATE
 PASADENA CITY, DWP (EIS USE)**

SECTION H: DEVICE ID INDEX

Device Index For Section H			
Device ID	Section H Page No.	Process	System
D9	1	2	1
D10	3	2	1
C35	9	3	0
D36	6	2	1
C38	6	2	1
C39	6	2	1
S41	6	2	1
D42	8	2	1
C44	8	2	1
C45	8	2	1
S47	8	2	1
D48	1	1	3
D49	8	2	3
C50	2	2	1
C51	3	2	1
C53	2	2	1
C54	4	2	1

FACILITY PERMIT TO OPERATE PASADENA CITY, DWP (EIS USE)

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

FACILITY CONDITIONS

F9.1 Except for open abrasive blasting operations, the operator shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated No.1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (a) of this condition.

[RULE 401, 3-2-1984; RULE 401, 11-9-2001]

F14.1 The operator shall not use fuel oil containing sulfur compounds in excess of 0.05 percent by weight.

The 0.05 percent sulfur limit shall not apply to existing supplies of any liquid fuel in storage as of October 1, 1993 until such supply is exhausted.

[RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000]

F14.2 The operator shall not purchase fuel oil containing sulfur compounds in excess of 15 ppm by weight as supplied by the supplier.

This condition shall become effective on or after June 1, 2004.

[RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000]

F16.1 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

purchase records of fuel oil and sulfur content of the fuel

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

FACILITY PERMIT TO OPERATE PASADENA CITY, DWP (EIS USE)

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The operator shall comply with the terms and conditions set forth below:

F18.1 Acid Rain SO2 Allowance Allocation for affected units are as follows:

Device ID	Boiler ID	Contaminant	Tons in any year
13	Broadway Unit No. B-1	SO2	126
14	Broadway Unit No. B-2	SO2	163
15	Broadway Unit No. B-3	SO2	74

a). The allowance allocation(s) shall apply to calendar years 2000 through 2009.

b). The number of allowances allocated to Phase II affected units by U.S. EPA may change in a 1998 revision to 40CFR73 Tables 2,3, and 4. In addition, the number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitate a revision to the unit SO2 allowance allocations identified in this permit (see 40 CFR 72.84)

[40CFR 73 Subpart B, 1-11-1993]

F24.1 Accidental release prevention requirements of Section 112(r)(7):

a). The operator shall comply with the accidental release prevention requirements pursuant to 40 CFR Part 68 and shall submit to the Executive Officer, as a part of an annual compliance certification, a statement that certifies compliance with all of the requirements of 40 CFR Part 68, including the registration and submission of a risk management plan (RMP).

b). The operator shall submit any additional relevant information requested by the Executive Officer or designated agency.

[40CFR 68 - Accidental Release Prevention, 5-24-1996]

DEVICE CONDITIONS

FACILITY PERMIT TO OPERATE PASADENA CITY, DWP (EIS USE)

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The operator shall comply with the terms and conditions set forth below:

A. Emission Limits

A63.1 The operator shall limit emissions from this equipment as follows:

CONTAMINANT	EMISSIONS LIMIT
CO	Less than 18297 LBS IN ANY ONE MONTH
PM	Less than 4302 LBS IN ANY ONE MONTH
VOC	Less than 881 LBS IN ANY ONE MONTH
SOX	Less than 184 LBS IN ANY ONE MONTH

For the purposes of this condition, the limit(s) shall be based on the total combined emissions from the gas turbine GT3 (D36) and the gas turbine GT4 (D42).

The operator shall calculate the emission limit(s) during the commissioning period by using monthly fuel usage data and the following emission factors: CO: 217.49 lb/MMscf, PM10: 7.13 lbs/MMscf, VOC: 3.89 lbs/MMscf, SOx: 0.43 lbs/MMscf.

The operator shall calculate the emission limit(s) during normal operations by using monthly fuel usage data and the following emission factors: CO: 31.33 lb/MMscf, PM10: 7.37 lbs/MMscf, VOC: 1.51 lbs/MMscf, SOx: 0.31 lbs/MMscf

The operator shall calculate the emission limit(s) for CO, after the CO CEMS certification, based on readings from the certified CEMS. In the event the CO CEMS is not operating or the emissions exceed the valid upper range of the analyzer, the emissions shall be calculated in accordance with the approved CEMS plan.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D36, D42]

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The operator shall comply with the terms and conditions set forth below:

A63.2 The operator shall limit emissions from this equipment as follows:

CONTAMINANT	EMISSIONS LIMIT
CO	Less than 12900 LBS IN ANY ONE MONTH
PM	Less than 3060 LBS IN ANY ONE MONTH
VOC	Less than 900 LBS IN ANY ONE MONTH
SOX	Less than 1080 LBS IN ANY ONE MONTH

For the purposes of this condition, the limit(s) shall be based on the total combined emissions from the gas turbine GT3 (D36) and the gas turbine GT4 (D42).

The operator shall calculate the emission limit(s) during normal operations by using monthly fuel usage data and the following emission factors: CO: 31.33 lb/MMscf, PM10: 7.37 lbs/MMscf, VOC: 1.51 lbs/MMscf, SOx: 0.31 lbs/MMscf

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D9, D10]

A99.1 The 0.412 LBS/NET MW-HR NOX emission limit(s) shall not apply when the initial commencement of ammonia injection is within the first 150 days, during natural gas firing.

[RULE 1135, 7-19-1991]

[Devices subject to this condition : C35]

A99.4 The 5.0 PPM NOX emission limit(s) shall not apply during turbine commissioning, startup, and shutdown periods. The commissioning period shall not exceed 213 operating hours from the date of initial start-up. The operator shall provide the AQMD with written notification of the initial start-up date. Written records of commissioning, startups, and shutdowns shall be maintained and made available upon request from AQMD.

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The operator shall comply with the terms and conditions set forth below:

[RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]

[Devices subject to this condition : D36, D42]

- A99.5 The 6.0 PPM CO emission limit(s) shall not apply during turbine commissioning, startup, and shutdown periods. The commissioning period shall not exceed 213 operating hours from the date of initial start-up. The operator shall provide the AQMD with written notification of the initial start-up date. Written records of commissioning, startups, and shutdowns shall be maintained and made available upon request from AQMD.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D36, D42]

- A99.6 The 108.57 LBS/MMSCF NOX emission limit(s) shall only apply during the interim period to report RECLAIM emissions. The interim period shall not exceed 12 months from the initial startup date.

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : D36, D42]

- A99.7 The 9.0 PPM NOX emission limit(s) shall not apply during SCR commissioning, startup, and shutdown periods. The operator shall provide the AQMD with written notification of the initial start-up date. Written records of commissioning, startups, and shutdowns shall be maintained and made available upon request from AQMD.

[RULE 2009, 5-11-2001]

[Devices subject to this condition : D9, D10]

- A195.1 The 5.0 PPMV NOX emission limit(s) is averaged over 3 hours at 15 percent oxygen, dry basis, rolling average.

[RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]

[Devices subject to this condition : D36, D42]

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The operator shall comply with the terms and conditions set forth below:

A195.2 The 6.0 PPMV CO emission limit(s) is averaged over 3 hours at 15 percent oxygen, dry basis, rolling average.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D36, D42]

A195.3 The 2.0 PPMV VOC emission limit(s) is averaged over 1 hour at 15 percent oxygen, dry basis, rolling average.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D36, D42]

A195.4 The 5.0 PPMV NH₃ emission limit(s) is averaged over 1 hour at 15 percent oxygen, dry basis.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C39, C45]

A195.6 The 5.0 PPMV NH₃ emission limit(s) is averaged over 1 hour at 15 percent oxygen, dry basis.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C50, C51, C53, C54]

A195.7 The 9.0 PPMV NO_x emission limit(s) is averaged over 1 hours at 15 percent oxygen, dry basis.

[RULE 2009, 5-11-2001]

[Devices subject to this condition : D9, D10]

A327.1 For the purpose of determining compliance with District Rule 475, combustion contaminant emissions may exceed the concentration limit or the mass emission limit listed, but not both limits at the same time.

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The operator shall comply with the terms and conditions set forth below:

[RULE 475, 10-8-1976; RULE 475, 8-7-1978]

[Devices subject to this condition : D9, D10, D36, D42]

C. Throughput or Operating Parameter Limits

C1.6 The operator shall limit the number of start-ups to no more than 750 in any one year.

Startup time shall not exceed 1 hour per startup.

Number of startups shall not exceed 400 in any one month.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

[RULE 1703 - PSD Analysis, 10-7-1988; RULE 2005, 4-20-2001]

[Devices subject to this condition : D36, D42]

C1.7 The operator shall limit the number of shut-downs to no more than 750 in any one year.

Shutdown time shall not exceed 8 minutes per shutdown.

Number of shutdowns shall not exceed 400 in any one month.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

[RULE 1703 - PSD Analysis, 10-7-1988; RULE 2005, 4-20-2001]

[Devices subject to this condition : D36, D42]

C1.8 The operator shall limit the operating time to no more than 149000 MW-hours in any calendar year.

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The operator shall comply with the terms and conditions set forth below:

To comply with this condition, the operator shall maintain a record of monthly MW-hours operated. The record shall be available to AQMD personnel upon request for a period of five years.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D9, D10]

C19.1 The operator shall maintain water/fuel ratio when burning natural gas and power generated in accordance with the following relationship:

water/fuel ratio when burning natural gas	ratio	power generated	megawatts
Greater than or equal to	1	Greater than	18

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D9, D10]

C157.2 The operator shall install and maintain a pressure relief valve set at 50 psig.

[RULE 402, 5-7-1976]

[Devices subject to this condition : D48]

D. Monitoring/Testing Requirements

D12.3 The operator shall install and maintain a(n) measuring device to accurately indicate the temperature at the outlet of the SCR reactor.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C35]

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The operator shall comply with the terms and conditions set forth below:

D12.4 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the turbine.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D9, D10]

D12.5 The operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia (NH₃).

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : C35]

D12.6 The operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia (NH₃).

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]

[Devices subject to this condition : C39, C45, C50, C51, C53, C54]

D12.7 The operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature of the exhaust at the inlet to the SCR reactor.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

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The operator shall comply with the terms and conditions set forth below:

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]

[Devices subject to this condition : C39, C45, C50, C51, C53, C54]

D12.8 The operator shall install and maintain a(n) pressure gauge to accurately indicate the pressure across the SCR catalyst bed in inches water column.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]

[Devices subject to this condition : C39, C45, C50, C51]

D28.1 The operator shall conduct source test(s) in accordance with the following specifications:

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The operator shall comply with the terms and conditions set forth below:

The test shall be conducted to determine the PM10 emissions at the outlet.

The District shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to determine the NOX emissions at the outlet.

The test shall be conducted to determine the total PM emissions at the outlet.

The test shall be conducted for NOx and CO emissions on fuel oil firing with the use of a certified CEMS. The use of the CEMS to accomplish the testing may be at the discretion of the operator.

The test shall be conducted to determine the VOC emissions at the outlet.

The test shall be conducted and a test plan submitted to the District engineer identified on the permit to construct not later than 45 days before the proposed test date and shall be approved by the District before the test commences. The plan shall include items as listed in engineering Form ST.

The test shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up.

The test shall be conducted and a written report shall be submitted to the AQMD Energy Team manager within the 60/180 day time frame denoted above. Source tests for emissions from fuel oil firing shall be performed during the first day of fuel oil readiness testing after one day of start-up testing.

The test shall be conducted to determine the CO emissions at the outlet.

The test shall be conducted while firing at maximum, minimum, and average firing rates for pollutants listed above, except that natural gas fired particulate emissions shall be conducted only at maximum load.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

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The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : C35, C53, C54]

D28.2 The operator shall conduct source test(s) in accordance with the following specifications:

The test shall be conducted at least annually.

The test shall be conducted to determine the NH₃ emissions at the outlet.

The test shall be conducted to determine the NH₃ emissions using District method 207.1 measured over a 60 minute averaging time period.

The test shall be conducted to demonstrate compliance with Rule 1303 compliance limit.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : C35]

D29.1 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NOX emissions	District method 100.1	1 hour	Outlet of the SCR serving this equipment
CO emissions	District method 100.1	1 hour	Outlet of the SCR serving this equipment
SOX emissions	Approved District method	District-approved averaging time	Outlet of the SCR serving this equipment
VOC	Approved District method	1 hour	Outlet of the SCR serving this equipment
PM emissions	Approved District method	District-approved averaging time	Outlet of the SCR serving this equipment

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The operator shall comply with the terms and conditions set forth below:

NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR serving this equipment
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The operator shall comply with the terms and conditions set forth below:

The test shall be conducted after District approval of the source test protocol, but no later than 180 days after initial start-up. The District shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (CFH), the flue gas flow rate, and the turbine and steam turbine generating output in MW.

The test shall be conducted in accordance with a District approved source test protocol. The protocol shall be submitted to the AQMD engineer no later than 45 days before the proposed test date and shall be approved by the District before the test commences. The test protocol shall include the proposed operating conditions of the turbine during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

The test shall be conducted The test shall be conducted when this equipment is operating at loads of 100, 75, and 50 percent of maximum load for the NO_x, CO, VOC and ammonia tests. For all other pollutants, the test shall be conducted at 100% load only.

The test shall be conducted for compliance verification of the BACT VOC 2.0 ppmv limit. The test results must be reported with two significant digits.

For natural gas fired turbines only, this shall be demonstrated by: a) Stack gas samples are extracted into Summa canisters, keeping a final canister pressure between 400-500 mm Hg absolute, b) Pressurization of Summa canisters is done with zero gas analyzed/certified of less than 0.05 ppmv total hydrocarbons as carbon, and c) Analysis of Summa canisters is per EPA Method TO-12 (with pre-concentration) and the temperature of the Summa canisters when extracting samples for analysis is not below 70 degree F.

The use of this alternative method does not mean that it is more accurate than AQMD Method 25.3, nor does it mean that it may be used in lieu of AQMD method 25.3 without approval, except for the determination of compliance with the VOC BACT level of 2.0 ppmv calculated as carbon for natural gas fired

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The operator shall comply with the terms and conditions set forth below:

turbines. Because the BACT level was set using data derived from various source test methods, this alternate method provides a fair comparison and represents the best sampling and analysis technique.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]

[Devices subject to this condition : D36, D42]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
SOX emissions	Approved District method	District-approved averaging time	Fuel Sample
VOC	Approved District method	1 hour	Outlet of the SCR serving this equipment
PM emissions	Approved District method	District-approved averaging time	Outlet of the SCR serving this equipment

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The operator shall comply with the terms and conditions set forth below:

The test shall be conducted at least once every three years.

The test shall be conducted and the results submitted to the District within 60 days after the test date. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted when the gas turbine is operating at 100 percent of maximum heat input.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration and/or monthly emissions limit.

The test shall be conducted for compliance verification of the BACT VOC 2.0 ppmv limit. The test results must be reported with two significant digits.

For natural gas fired turbines only, this shall be demonstrated by: a) Stack gas samples are extracted into Summa canisters, keeping a final canister pressure between 400-500 mm Hg absolute, b) Pressurization of Summa canisters is done with zero gas analyzed/certified of less than 0.05 ppmv total hydrocarbons as carbon, and c) Analysis of Summa canisters is per EPA Method TO-12 (with pre-concentration) and the temperature of the Summa canisters when extracting samples for analysis is not below 70 degrees F.

The use of this alternative method does not mean that it is more accurate than AQMD Method 25.3, nor does it mean that it may be used in lieu of AQMD method 25.3 without approval, except for the determination of compliance with the VOC BACT level of 2.0 ppmv calculated as carbon for natural gas fired turbines. Because the BACT level was set using data derived from various source test methods, this alternate method provides a fair comparison and represents the best sampling and analysis technique.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D36, D42]

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The operator shall comply with the terms and conditions set forth below:

D29.3 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR serving this equipment

The test shall be conducted and the results submitted to the District within 60 days after the test date. The AQMD shall be notified of the date and time of the test at least 7 days prior to the test.

The test shall be conducted once each calendar quarter during the first twelve months of operation and annually thereafter. The NOx concentration, as determined by the certified CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable or not yet certified, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60-minute averaging time period.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 4-20-2001]

[Devices subject to this condition : C39, C45]

D29.4 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR serving this equipment

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The operator shall comply with the terms and conditions set forth below:

The test shall be conducted and the results submitted to the District within 60 days after the test date. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted once per calendar quarter during the first twelve months of operation and annually thereafter. The NO_x concentration, as determined by the certified CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable or not yet certified, a test shall be conducted to determine the NO_x emissions using District Method 100.1 measured over a 60-minute averaging time period.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C50, C51, C53, C54]

D29.5 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NOX emissions	District method 100.1	1 hour	Outlet of the SCR serving this equipment
CO emissions	District method 100.1	1 hour	Outlet of the SCR serving this equipment
PM emissions	Approved District method	District-approved averaging time	Outlet of the SCR serving this equipment
NH3 emissions	District method 207.1 and 5.3 or EPA method	1 hour	Outlet of the SCR serving this equipment

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The operator shall comply with the terms and conditions set forth below:

The test shall be conducted after District approval of the source test protocol, but no later than 180 days after initial start-up. The District shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (CFH), the flue gas flow rate, and the turbine and steam turbine generating output in MW.

The test shall be conducted in accordance with a District approved source test protocol. The protocol shall be submitted to the AQMD engineer no later than 45 days before the proposed test date and shall be approved by the District before the test commences. The test protocol shall include the proposed operating conditions of the turbine during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

The test shall be conducted when this equipment is operating at loads of 100, 75, and 50 percent of maximum base load for the NO_x, CO, VOC and ammonia tests. For all other pollutants, the test shall be conducted at 100% of maximum base load only.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2009, 5-11-2001]

[Devices subject to this condition : D9, D10]

D82.1 The operator shall install and maintain a CEMS to measure the following parameters:

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The operator shall comply with the terms and conditions set forth below:

CO concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis.

The CEMS will convert the actual CO concentrations to mass emission rates (lbs/hr) and record the hourly emission rates on a continuous basis.

The CEMS shall be installed and operated, in accordance with an approved AQMD Rule 218 CEMS plan application. The operator shall not install the CEMS prior to receiving initial approval from AQMD.

The CEMS shall be installed and operated to measure CO concentration over a 15 minute averaging time period.

The CEMS shall be installed and operating no later than 90 days after initial startup of the turbine.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 218, 5-14-1999]

[Devices subject to this condition : D36, D42]

D82.2 The operator shall install and maintain a CEMS to measure the following parameters:

NOX concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis.

The CEMS shall be installed and operating no later than 12 months after initial start-up of the turbine and shall comply with the requirements of Rule 2012. During the interim period between the initial start-up and the provisional certification date of the CEMS, the operator shall comply with the monitoring requirements of Rule 2012(h)(2) and 2012(h)(3). Within two weeks of the turbine startup date, the operator shall provide written notification to the District of the exact date of start-up.

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The operator shall comply with the terms and conditions set forth below:

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : D36, D42]

D82.3 The operator shall install and maintain a CEMS to measure the following parameters:

NOX concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis.

The CEMS shall be installed and operating no later than one year after initial start-up and shall comply with the requirements of Rule 2012. During the interim period between the initial start-up and the provisional certification date of the CEMS, the operator shall comply with the monitoring requirements of Rule 2012(h)(2) and 2012(h)(3). Within two weeks of the turbine startup date, the operator shall provide written notification to the District of the exact date of start-up.

[RULE 2009, 5-11-2001; RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : D9, D10]

D232.1 The operator shall install and maintain a continuous emission monitoring device to accurately indicate the ammonia concentration in the flue gas exiting the turbine exhaust stack. the continuous emission monitoring device shall be approved by the executive officer and shall monitor and record ammonia concentrations, and alert the operator (via audible or visible alarm) whenever ammonia concentrations are near, at, or in excess of the permitted ammonia limit of 5 ppmv, corrected to 15 percent oxygen. it shall continuously monitor, compute, and record the following parameters.

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The operator shall comply with the terms and conditions set forth below:

Ammonia concentration, uncorrected in ppmv.

Oxygen concentration in percent.

Ammonia concentration in ppmv, corrected to 15 percent oxygen.

Date, time, extent (in time) of all excursions above 5 ppmv, corrected to 15 percent oxygen.

The continuous emission monitoring device described above shall be operated and maintained according to a Quality Assurance Plan (QAP) approved by the Executive Officer. The QAP must address contingencies for monitored ammonia concentrations near, at, or above the permitted compliance limit, and remedial actions to reduce ammonia levels once an exceedance has occurred.

The continuous emission monitoring device may not be used for compliance determination or emission information determination without corroborative data using an approved reference method for the determination of ammonia.

The Continuous Emission Monitoring Device shall be installed and operating no later than 90 days after initial startup of the turbine.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]

[Devices subject to this condition : C39, C45, C50, C51, C53, C54]

FACILITY PERMIT TO OPERATE PASADENA CITY, DWP (EIS USE)

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

D372.1 The operator shall determine compliance with the particulate matter (PM) emission limit by conducting a source test at the outlet of the exhaust stack annually using AQMD Method 5.1. Each test shall include:

(a) One test using natural gas operating at minimum load under normal operating conditions, if natural gas is burned more than 120 consecutive hours or 200 hours accumulated over any 12 consecutive months. The test shall be conducted no later than six months after the time limit has been exceeded;

(b) One test using natural gas operating at maximum load under normal operating conditions, if natural gas is burned more than 120 consecutive hours or 200 hours accumulated over any 12 consecutive months. The test shall be conducted no later than six months after the time limit has been exceeded;

(c) One test using fuel oil operating at maximum load under normal operating conditions, if fuel oil is burned more than 120 consecutive hours. However, this paragraph does not apply if fuel oil is not burned. The test shall be conducted no later than six months after the time limit has been exceeded.

The annual source test frequency will be reduced to at least once every five years for each fuel type under the highest emitting load if three consecutive annual tests show compliance with either the concentration limit or the mass emission limit.

No test shall be required in any one year for which the equipment is not in operation.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : D9, D10]

E. Equipment Operation/Construction Requirements

E57.2 The operator shall vent this equipment to the electrostatic precipitator which serves the bearing oil vent, and the precipitator shall be in full use whenever the turbine is in operation.

FACILITY PERMIT TO OPERATE PASADENA CITY, DWP (EIS USE)

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

[RULE 401, 3-2-1984; RULE 401, 11-9-2001]

[Devices subject to this condition : D9, D10]

E73.2 Notwithstanding the requirements of Section E conditions, the operator may, at his discretion, choose not to use ammonia injection if all of the following requirement(s) are met:

Within 150 days (or other period approved in writing by the Executive Officer) after initial startup of the SCR system

Whenever the outlet exhaust temperature of the SCR reactor is less than 500 degrees F

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C35]

E73.3 Notwithstanding the requirements of Section E conditions, the operator may, at his discretion, choose not to use ammonia injection if any of the following requirement(s) are met:

The inlet exhaust temperature to the SCR is 570 °F or less, not to exceed 60 minutes during a startup.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]

[Devices subject to this condition : C39, C45]

E73.4 Notwithstanding the requirements of Section E conditions, the operator may, at his discretion, choose not to use ammonia injection if any of the following requirement(s) are met:

The inlet exhaust temperature to the SCR is 500 °F or less, not to exceed 60 minutes during a startup.

FACILITY PERMIT TO OPERATE PASADENA CITY, DWP (EIS USE)

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]

[Devices subject to this condition : C50, C51, C53, C54]

E144.1 The operator shall vent this equipment, during filling, only to the vessel from which it is being filled.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D48]

E179.1 For the purpose of the following condition number(s), continuously record shall be defined as recording at least once every hour and shall be calculated upon the average of the continuous monitoring for that hour.

Condition Number D 12- 6

Condition Number D 12- 7

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]

[Devices subject to this condition : C39, C45, C50, C51, C53, C54]

E179.2 For the purpose of the following condition number(s), continuously record shall be defined as recording at least once every hour and shall be calculated upon the average of the continuous monitoring for that month.

Condition Number D 12- 8

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]

[Devices subject to this condition : C39, C45, C50, C51, C53, C54]

FACILITY PERMIT TO OPERATE PASADENA CITY, DWP (EIS USE)

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

- E192.1 The operator shall comply with the following condition number(s) by providing NOx and CO data obtained during fuel oil readiness testing or during a force majeure curtailment from the CEMS of the associated utility boiler. The owner or operator of this equipment may also elect to demonstrate compliance with condition no. 99-2 for fuel oil firing by source testing the equipment in accordance with condition no. 28-1. Compliance with District rule 407 may also be demonstrated using the same methodology explained above.

Condition Number 99-2

[RULE 1135, 7-19-1991]

[Devices subject to this condition : C35]

- E193.1 The operator shall upon completion of construction, operate and maintain this equipment according to the following specifications:

In accordance with all mitigation measures stipulated in Mitigated Negative Declaration issued by the city of Pasadena, issued on July 31, 2002, State Clearing House Number: 2002061081.

[CA PRC CEQA, 11-23-1970]

[Devices subject to this condition : D36, C39, D42, C45, D48, D49]

- E262.1 The operator shall, in addition to the requirement(s) of condition(s) listed below, comply with the requirement(s) listed below.

Condition Number 73-2

Within 7 days of initial start-up of the SCR system, the owner or operator of this equipment shall notify the manager of the Energy Team in writing

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C35]

FACILITY PERMIT TO OPERATE PASADENA CITY, DWP (EIS USE)

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

I. Administrative

- I296.1 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the annual emissions increase for the first 12 months of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

[RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]

[Devices subject to this condition : D36, D42]

- I331.1 The conditions and requirements for this device in Section H shall take effect, and shall supersede those in Section D, when the modifications authorized in Section H are completed. The operator shall notify the AQMD when the modifications are completed.

[RULE 202, 5-7-1976]

[Devices subject to this condition : D9, D10]

K. Record Keeping/Reporting

- K40.1 The operator shall provide to the District a source test report in accordance with the following specifications:

FACILITY PERMIT TO OPERATE PASADENA CITY, DWP (EIS USE)

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Source test results shall be submitted to the District no later than 180 days after the source test was conducted.

Source test results shall also include at a minimum, the fuel flow rate (CFM), flue gas flowrate (SCFM), utility boiler exhaust temperature (degrees F) before the SCR reactor, the NH₃ injection rate (lb/hr) upstream of the SCR reactor, NH₃/NO_x molar ratio, and net utility boiler and steam turbine electric generator output (MW). This information shall be obtained at each load under which the test was conducted.

Source test results shall also include the gaseous emissions data in units of pounds per hour (lb/hr), pounds per net megawatt hour (lb/netMWH), and parts per million, on a dry basis at 3 percent O₂ under which the test was conducted.

Source test results shall also include PM data in units of lbs/hr and grains per dry standard cubic feet (grains/DSCF) under which the test was conducted.

Source test results shall include air contaminant emissions with respect to a description in detail of how the above requested parameters were estimated, measured, or calculated.

[**RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002**]

[Devices subject to this condition : C35]

K40.2 The operator shall provide to the District a source test report in accordance with the following specifications:

FACILITY PERMIT TO OPERATE PASADENA CITY, DWP (EIS USE)

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Source test results shall be submitted to the District no later than 60 days after the source test was conducted.

Emission data shall be expressed in terms of concentration (ppmv) corrected to 15 percent oxygen (dry basis), mass rate (lbs/hr), and lbs/MM Cubic Feet. In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains per DSCF.

All exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute (DSCFM) and dry actual cubic feet per minute (DACFM).

All moisture concentration shall be expressed in terms of percent corrected to 15 percent oxygen.

Source test results shall also include the oxygen levels in the exhaust, fuel flow rate (CFH), the flue gas temperature, and the generator power output (MW) under which the test was conducted.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 4-20-2001; RULE 2005, 5-6-2005]

[Devices subject to this condition : D9, D10, D36, D42]

K67.5 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

The data monitored by conditions number D12-3 and D82-1

Temperature records shall be kept on a minute-by-minute basis until ammonia injection commences

The manner of recordkeeping shall be approved in writing by the manager of the Energy Team. All records shall be retained for a period of 5 years and shall be made available to District personnel upon request

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

FACILITY PERMIT TO OPERATE PASADENA CITY, DWP (EIS USE)

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : C35]

K67.7 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Natural gas fuel use during the commissioning period.

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : D36, D42]

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PERMIT TO CONSTRUCT

COMPANY NAME AND ADDRESS

Pasadena City, DWP
72 E. Glenarm Street
Pasadena, CA 91105
SCAQMD ID # 800168

Contact: Gurchuran Bawa, (626) 744-6562

EQUIPMENT LOCATION

Glenarm Power Plant
72 E. Glenarm Street
Pasadena, CA 91105

EQUIPMENT DESCRIPTION

Section H of the facility permit ID #800168: Facility Description and Equipment Specific Conditions.

Equipment	ID No.	Connected To	RECLAIM Type/ Monitoring Unit	Emissions and Requirements	Conditions
PROCESS 2: INTERNAL COMBUSTION					
SYSTEM 1: TURBINES					
GAS TURBINE, GT-1, NATURAL GAS, CURTISS WRIGHT, MODEL MOD POD-30, WITH STEAM OR WATER INJECTION, 298 MMBTU/HR WITH : PRATT WHITNEY FT4C	D9	C50	NOx: MAJOR SOURCE	NOx: 9.0 PPMV NATURAL GAS (1) [RULE 2009]; NOx: 283.341 LBS/MMSCF NATURAL GAS (1) [RULE 2012]; NOx: 162 PPMV (8) [40CFR 60 SUBPART GG]; CO: 2,000 PPMV (5)	A63-2, A99-7, A195-7, A327-1, C1-8, C19-1, D12-4, D29-5, D82-3, D372-1

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Equipment	ID No.	Connected To	RECLAIM Type/ Monitoring Unit	Emissions and Requirements	Conditions
<u>POWER TURBINE</u> GENERATOR, 30.58 MW MAXIMUM LOAD, 22.5 MW BASE LOAD A/N: 438039- <u>528165</u>				[RULE 407]; PM: 11 LB/HR (5) [RULE 475]; PM: 0.01 GRAINS/SCF (5); PM: 0.1 GRAINS/SCF (5) [RULE 409] SO ₂ : 150 PPMV (8) [40CFR 60 SUBPART GG];	E57-2, I331-1, K40-2

BACKGROUND

The city of Pasadena (Pasadena) operates the Glenarm Power Plant for electricity generation. The facility includes four gas turbine generators and a boiler generator. Gas turbine generator GT1 was damaged by a fire in 2010. The fire damaged the power turbine of the generator. The compressor, the combustion turbine, and the combustor section are not damaged by the fire. The city of Pasadena intends to replace the power turbine with an identical unit. However, the manufacturer Curtis Wright is no longer in the power generation business that identical replacement cannot be found. After an engineering study it is determined that a Pratt Whitney FT4C power turbine will match the current power turbine specifications and performance.

The following is a list of the applications Pasadena has submitted. The applications were received on September 30, 2011. They were deemed complete on November 15, 2011.

Application Number	Purpose	Fee
528165	GT1 Power Turbine Replacement	\$4,636.58
528166	Title V minor revision	\$1,747.19

Pasadena is a Title V facility. It participates in the RECLAIM NO_x program.

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DISCUSSIONS

A simple cycle gas turbine is typically comprised of the compressor, the combustor, and the turbine. Air pollutants emissions are generated from combustion of fuel in the combustor. A power turbine is an auxiliary unit connected to the gas turbine exhaust. Thus, the power turbine has limited impact to the gas turbine emissions. The power turbine may change the emission characteristics of the gas turbine if it creates additional back pressure.

The facility has stated and demonstrated with test data that the new power turbine will not alter the emission characteristics of the existing gas turbine. With the new power turbine the unit has a slightly less power output and a smaller heat rate. For example, at 60 F, the gas turbine with Curtis Wright power turbine generates 28.8 MW and has a heat rating of 13700 Btu/kW-hr while the gas turbine with the Pratt Whitney power turbine generates 27.8 MW and has a heat rating of 13150 Btu/kW-hr. The data suggest that the heat input is 394.56 MMBtu/hr for the existing unit and 365.57 MMBtu/hr for the replacement unit. With the lower heat input and the anticipated same emission limits the replacement power turbine is not expected to have emission increases.

Therefore, the replacement of the power turbine is expected not to trigger NSR reviews.

RULE EVALUATIONS

California Environmental Quality Act (CEQA)

The applicant has indicated in the CEQA form that the proposed project will not trigger CEQA review.

Rule 212 – Standards for Approving Permits

The proposed modification will not increase emissions. Public notice is not needed.

Rule 401 – Visible Emissions

Visible emissions are not expected from this type of equipment if it is operating properly.

Rule 402 – Nuisance

Nuisance complaints are not expected.

Rule 407 – Liquid and Gaseous Contaminants

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This rule limits CO emissions to 2,000 ppmv. The requirement for SOx emissions does not apply since the equipment was commissioned prior to July 1, 1982. Compliance with the CO limit is anticipated and is to be verified through source tests.

Rule 409 – Combustion Contaminants

This rule limits PM emissions to 0.1 grains/dscf. Compliance is expected. Refer to the evaluation in Rule 475 for determinations.

Rule 431.1 – Sulfur Contents of Gaseous Fuels

The gaseous fuel used in this facility is commercial grade commercial grade natural gas complies with the sulfur limit of 16 ppmv. Compliance is expected.

Rule 475 – Electric Power Generation Equipment

This rule limits PM emissions to either less than 11 lb/hour or less than 0.01 grains/scf. As shown in the Appendix A, the worse case (fuel oil) PM emissions are 3.57 lb/hr. Therefore, compliance with this rule is expected.

Regulation XIII – New Source Review

There will be no emission increases. This regulation is not triggered.

Rule 1401 – New Source Review of Toxic Air Contaminants

There will be no emission increases. This regulation is not triggered.

Rule 2005 – New Source Review for RECLAIM

There will be no NOx emission increases. This regulation is not triggered.

Regulation XXX – Title V Facility Permits

Pasadena is a federal Title V facility. The proposed modification to GT1 constitutes a minor facility permit change. A draft permit revision will be prepared for this project (under application number 528166). In accordance with Title V requirements, a copy of the draft permit revision will be provided to the facility prior to submitting to the EPA for their review. The final permit to operate will be issued at the conclusion of the EPA 45-day review period as specified in Rule 3005(c)(2)(B)(ii).

RECOMMENDATIONS

The proposed modification is expected to comply with all applicable regulations. It is recommended that the District approve the proposed change of conditions.