

Bay Area Air Quality Management District

939 Ellis Street
San Francisco, CA 94109
(415) 771-6000

**Permit Evaluation
and
Statement of Basis
for
Minor Revision to the**

MAJOR FACILITY REVIEW PERMIT

**for
Calpine Gilroy Cogen, LP & Gilroy Energy Center, LLC
Facility #B1180**

Facility Address:
1400 Pacheco Pass Highway
Gilroy, CA 95020

Mailing Address:
P. O. Box 1764
Gilroy, CA 95021

January 2011

Application Engineer: Brian Lusher
Site Engineer: Brian Lusher

Applications: 18434, 22302

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Title V Statement of Basis

A. Background

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Volume 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a major facility as defined by BAAQMD Regulation 2-6-212. It is a major facility because it has the “potential to emit,” as defined by BAAQMD Regulation 2-6-218, of more than 100 tons per year of a regulated air pollutant.

The gas turbines at the facility are also subject to the Acid Rain permit program in 40 CFR Part 72 and a Title V permit would be required even if the potential to emit did not exceed 100 tons per year.

Major Facility Operating permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6. The permits must contain all applicable requirements (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is B1180.

Current Permit Action

Regulation 9, Rule 9, Nitrogen Oxides from Stationary Gas Turbines, was amended on December 6, 2006 and now requires S-100 to meet a lower NOx emission rate. In accordance with Regulation 9, Rule 9, Section 301.2, S-100 will be required to meet a NOx emission limit of 5 ppmvd @15% O₂ or 0.15 lb/MW-hr. NOx emissions from S-100 are currently abated by steam injection. In order to meet the new rule requirements, the facility plans to install Dry Low NOx combustors. Facilities subject to Regulation 9, Rule 9, were required to meet the new emission limits contained in Section 301.2 by January 1, 2010 unless the facility had to install new control equipment. In that case, Section 9-9-402.2 allows compliance at the next scheduled major maintenance or January 1, 2012, whichever is earlier. The facility plans to install Dry Low NOx combustors on S-100 in April, 2011. The permit evaluation for Application No. 18434 is in Appendix B and forms part of this statement of basis.

- **Minor Permit Revision of Current Title V Permit**

The installation of Dry Low NO_x combustors on S-100 is considered a minor revision since it does not meet the definition of an Administrative Amendment contained in Regulation 2, Rule 6, Section 201 because it is not a non-substantive change to S-100. The modification to S-100 is not considered a significant permit revision according to Regulation 2, Rule 6, Section 226, since there is no emissions increase that would be considered a major modification under PSD, NSR, NSPS, NESHAPs, or Section 112(r) of the Clean Air Act. The modification of S-100 also does not cause any significant change or relaxation of any monitoring, reporting, or recordkeeping requirements. The modification of S-100 gas turbine also does not trigger any new applicable requirements or avoid future applicable requirements. Since the installation of Dry Low NO_x combustors on S-100 does not meet the definition of an administrative amendment or significant permit revision, it will be considered a minor permit revision as defined by Regulation 2, Rule 6, Section 215.

B. Facility Description

Calpine Gilroy Cogen, L.P, a cogeneration facility, and Calpine Gilroy Energy Center, L.L.C, a peaking facility, are collocated on Pacheco Pass Highway (Highway 152), southeast of the business district of Gilroy in Santa Clara County, California.

The cogeneration facility “Calpine Gilroy Cogen, L.P” produces both electricity for sale to Pacific Gas & Electric Company (PG&E) and steam for sale to ConAgra Foods from a combined cycle gas turbine. The following permitted sources and abatement devices listed in Tables II-A and II-B of the permit are located at Calpine Gilroy Cogen, L.P: S-100, S-101, S-102, S-104, and A-100. Sources S-100, S-101, S-102 and S-104 were issued an Authority to Construct (AC) and a Permit to Operate (PO) under Application 30331 in April 1985 and June 1988, respectively. Abatement device A-100 was issued an AC and PO under Application 1530 in December 1988 and June 1990, respectively.

The peaking facility “Calpine Gilroy Energy Center, L.L.C” is located south of the cogeneration facility, and produces electricity at peak demand times under contract with the California Department of Water Resources (DWR), or for sale to PG&E, from three simple cycle gas turbines. The following permitted sources and abatement devices listed in Tables II-A and II-B of the permit are located at Calpine Gilroy Energy Center, L.L.C: S-3, S-4, S-5, A-3, A-4, A-5, A-6, A-7 and A-8. The above sources and abatement devices were issued an AC and PO under Application 2686 in June 2001 and June 2002, respectively. Sources S-3 and S-4 achieved first fire in October 2001 and source S-5 achieved first fire in February 2002. The Commercial On-Line Date (COD) i.e. date when turbines were ready for routine operation was April 2002.

Following is a description of the sources at Calpine Gilroy Cogen, L.P and Calpine Gilroy Energy Center, L.L.C.

S-100 Gas Turbine Generator:

S-100 is a General Electric (GE) Frame 7 industrial combined-cycle turbine that uses natural gas as its only fuel source. The turbine drives an electric generator with a hot end drive (i.e. shaft that drives the electric generator passes through the hot exhaust of the turbine). Exhaust gases from the turbine are sent to a Heat Recovery Steam Generator (HRSG), which consists of large bundles of tubes made out of highly conductive materials that are collectively referred to as heat exchangers. Feed water pumps continually run De-Ionized (DI) through the heat exchangers in the heat recovery steam generator (HRSG). The HRSG does not have supplemental fuel firing (i.e. duct burners). The superheated steam formed in the HRSG is injected into the steam turbine downstream of it. The steam turbine is a two-stage (high pressure and low pressure) generator. As the superheated steam expands through the steam turbine, its temperature and pressure decrease and energy is transferred to the turbine, making it to rotate. Some amount of steam that completes its run through the high-pressure section of the steam turbine is extracted for use by ConAgra foods in their food drying process. The remaining steam is sent to the low-pressure section of the steam turbine.

Combustion turbines such as S-100 that compress combustion air are sensitive to changes in ambient temperature - both the compressor capacity and the efficiency of the turbine decrease with increasing ambient temperatures. Specifically, the power demand of the compressor section of the turbine is approximately proportional to the absolute temperature of the inlet air. This in turn makes the efficiency of the turbine proportional to the inverse of the absolute temperature entering the compressor section.

To counteract the warm ambient air degradation and increase S-100's power output, Calpine Gilroy Cogen, L.P employs one of two inlet air-cooling systems at any given time. The first system is a fogging system. Here DI water is sprayed into the inlet air stream to cool the inlet air via evaporation. The second system is called the Thermal Energy Storage System (TESS). The TESS uses a refrigeration unit to make ice in the off-peak hours when electric prices are low. During peak price hours, the ice is used - via a chilled water loop, to cool the inlet air. The TESS system is drastically affected by the plant's market dispatch. If the plant does not run overnight, the TESS cannot be 'recharged', and fogging will be the only cooling system that will be used.

Criteria pollutant emissions of NO_x and CO from S-100 are currently controlled with the use of steam injection and an oxidation catalyst, respectively. Steam is injected into the combustion chamber of S-100, which in turn reduces the amount of NO_x produced by the turbine. In order to meet the requirements of Regulation 9, Rule 9, the facility plans to install Dry Low NO_x combustors on S-100 in April of 2011 to control NO_x. After the new combustors are installed steam injection will no longer be necessary for NO_x control. The oxidation catalyst, A-100, oxidizes the CO emissions from the turbine to CO₂ and water.

C. Permit Content

I. Standard Conditions

This section contains administrative requirements and conditions that apply to all facilities.

No changes to this section are proposed in this action.

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S24).

Changes in this action

Table II-A

Each of the following sources has been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. The capacities in this table are the maximum allowable capacities for each source, pursuant to Standard Condition J and Regulation 2-1-301.

S-#	Description	Make or Type	Model	Capacity
100	87 MW Gas Turbine Generator, Natural Gas with Dry Low NOx combustors steam injection	General Electric	Frame 7EA	1085 MM Btu/hr (HHV) @ 35 F

III. Generally Applicable Requirements

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit

No changes to this section are proposed in this action.

IV. Source-Specific Applicable Requirements

Section IV of the permit contains citations to all of the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District's or EPA's websites, or in the permit conditions, which are found in Section VI of the permit.

Complex Applicability Determinations

This permit did not require any complex applicability determinations.

Other changes in this action

**Table IV-B
S-100 – GAS TURBINE**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 1	General Provisions and Definitions (5/2/01)		
1-431	Breakdown Report	Y	
1-432	Written Breakdown Report	Y	
1-433	Determination of Breakdown	Y	
1-520	Continuous Emission Monitoring	Y	
1-522	Continuous Emission Monitoring and Recordkeeping Procedures	Y	
1-522.1	Plans and Specifications	Y	
1-522.2	Installation Scheduling	Y	
1-522.3	Performance Testing	Y	
1-522.4	Periods of Inoperation Greater Than 24 Hours	Y	
1-522.5	Calibration	Y	
1-522.6	Accuracy	Y	
1-522.7	Excesses	Y	
1-522.8	Monthly Reports	Y	
1-522.9	Records	Y	
1-522.10	Monitors Required by Sections 1-521 or 2-1-403	Y	
1-523	Parametric Monitoring and Recordkeeping Procedures	Y	
1-602	Area and Continuous Emission Monitoring Requirements	N	
SIP Regulation 1	General Provisions and Definitions (6/28/99)		
1-522	Continuous Emission Monitoring and Recordkeeping Procedures	Y ¹	
1-522.7	Emission limit exceedance reporting requirements	Y ¹	
BAAQMD Regulation 2, Rule 1	Regulation 2, Rule 1 – Permits, General Requirements (8/1/01)		
2-1-501	Monitors	Y	
BAAQMD Regulation 6	Particulate Matter and Visible Emissions (12/19/90)		
6-301	Ringelmann Number 1 Limitation	Y	
6-305	Visible Particles	Y	
6-310	Particulate Weight Limitation	Y	
6-401	Appearance of Emissions	Y	
BAAQMD Regulation 9, Rule 1	Inorganic Gaseous Pollutants – Sulfur Dioxide (3/15/95)		
9-1-301	Limitations on Ground Level Concentrations	Y	
9-1-302	General Emission Limitations	Y	

**Table IV-B
S-100 – GAS TURBINE**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 9 Rule 9	<u>Inorganic Gaseous Pollutants-Nitrogen Oxides from Stationary Gas Turbines (12/6/06)</u>		
<u>9-9-113</u>	<u>Exemption – Inspection/Maintenance</u>	<u>N</u>	
<u>9-9-114</u>	<u>Exemption – Start-Up/Shutdown</u>	<u>N</u>	
<u>9-9-301</u>	<u>Emission Limits, General</u>	<u>N</u>	
<u>9-9-301.1.3</u>	<u>Emission Limits- Turbines Rated ≥ 10 MW w/SCR</u>	<u>N</u>	
<u>9-9-301.2</u>	<u>Emission Limits, General</u>	<u>N</u>	<u>1/1/2010</u>
<u>9-9-401</u>	<u>Certification, Efficiency</u>	<u>N</u>	
<u>9-9-402.2</u>	<u>Compliance Schedule</u>	<u>N</u>	<u>1/1/2012</u>
<u>9-9-501</u>	<u>Monitoring and recordkeeping requirements</u>	<u>N</u>	
SIP BAAQMD Regulation 9, Rule 9	<u>Inorganic Gaseous Pollutants-Nitrogen Oxides from Stationary Gas Turbines (12/15/979/21/94)</u>		
9-9-113	Exemption – Inspection/Maintenance	Y ¹	
9-9-114	Exemption – Start-Up/Shutdown	Y ¹	
9-9-305	Emission Limits, Existing Low-NOx Turbines	Y ¹	
9-9-401	Certification, Efficiency	Y ¹	
9-9-501	Monitoring and recordkeeping requirements	Y ¹	
BAAQMD Manual of Procedures, Volume V	Continuous Emission Monitoring Policy and Procedures (1/20/82)	Y	
40 CFR 60 Subpart A	Standards of Performance for New Stationary Sources (12/23/71)	Y	
	General Provisions	Y	
60.4(b)	Reports to EPA and District	Y	
60.7(a)	Written notification	Y	
60.7(b)	Records	Y	
60.8	Performance Tests	Y	
60.9	Availability of Information	Y	
60.11(a)	Compliance with standards and maintenance requirements	Y	
60.11(d)	Minimizing emissions	Y	
60.12	Circumvention	Y	
60.13	Monitoring Requirements	Y	
60.19	General notification and reporting requirements	Y	
40 CFR 60 Appendix B	Performance Specifications	Y	
Performance Specification 2	Specifications and test procedures for SO ₂ and NO _x continuous emission monitoring systems in stationary sources	Y	

**Table IV-B
S-100 – GAS TURBINE**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
Performance Specification 3	Specifications and test procedures for O ₂ and CO ₂ continuous emission monitoring systems	Y	
40 CFR 60 Appendix F	Quality Assurance Procedures		
Procedure 1	Quality assurance requirements for gas continuous emission monitoring systems used for compliance determination	Y	
Subpart GG	Standards of Performance for Stationary Gas Turbines (1/27/82)		
60.332(a)(1)	NO _x limit	Y	
60.332(a)(3)	Choice of “F” values available (either NO _x emission allowance for fuel-bound nitrogen or zero) to owner/operator to use in equation in Section 60.332(a)(1)	Y	
60.332(a)(4)	Definition of “F” value – if the owner/operator elects the NO _x emission allowance for fuel-bound nitrogen option.	Y	
60.333	Performance Standards, SO ₂	Y	
60.334(b)	Requirements for CEMS consisting of NO _x and O ₂ monitors installed at turbines which use steam injection that were constructed, reconstructed, or modified after October 3, 1977, but before July 8, 2004	Y	
60.334(h)(1)	Requirements for monitoring total sulfur content of fuel fired in turbines	Y	
60.334(h)(3)	Options available to owner/operator to discontinue total sulfur content monitoring	Y	
60.334(i)(2)	Frequency (once per unit operating day) of determining the sulfur and nitrogen content of the gaseous fuel fired in the turbines	Y	
60.334 (j)(1)(iii)	Nitrogen oxides: Excess emissions and monitor downtime reporting requirements for turbines using NO _x and diluent CEMS	Y	
60.334 (j)(2)(i)	Sulfur Dioxide: (Applicable only if owner or operator is required to monitor sulfur content of fuel per Section 60.334(h)) Excess emissions	Y	
60.334 (j)(2)(iii)	Sulfur Dioxide: Fuel sulfur content monitor downtime	Y	
60.334(j)(5)	Postmarking requirements for reports	Y	
60.335	Test Methods and Procedures	Y	
BAAQMD Manual of Procedures, Volume V	Continuous Emission Monitoring Policy and Procedures (1/20/82)	Y	
40 CFR 72	Title IV - Acid Rain Program	Y	March 1, 2005
40 CFR Part 75	Code of Federal Regulations, Continuous Emissions Monitoring	Y	March 1, 2005

**Table IV-B
S-100 – GAS TURBINE**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Cond# 2780			
Part 1a(i)	BACT NOX Limit (basis: BACT, PSD)	Y	
<u>Part 1a(ii)</u>	<u>NOx Limit for Dry Low NOx combustor that must be installed by January 1, 2012. (basis: 9-9-301.2)</u>	<u>N</u>	<u>Installation date</u>
Part 1b(i)	Startup and shutdowns (basis: BACT)	Y	
<u>Part 1b(ii)</u>	<u>Startup and shutdowns after Dry Low NOx combustors are installed. (Basis: 9-9-217, 9-9-218)</u>	<u>N</u>	<u>Installation date</u>
Part 1c	Steam Injection (basis: BACT, PSD)	Y	<u>NA after installation date</u>
Part 1e	RACT NOX limit adjusted for capacity increase and efficiency (basis: 2-2-604, <u>SIP</u> 9-9-113, <u>SIP</u> 9-9-114, <u>SIP</u> 9-9-305, <u>SIP</u> 9-9-401)	Y	
Part 1f	Annual NOX limit (basis: BACT, <u>SIP</u> 9-9-305, 2-2-604)	Y	
Part 1g	Daily NOX limit (basis: 2-2-301)	Y	
Part 3a	CO control requirement (basis: BACT)	Y	
Part 3b	Annual CO emission limit (basis: BACT)	Y	
Part 3c	CO concentration limit (basis: BACT)	Y	
Part 3d	CO emissions during Startup and shutdown periods (basis: BACT)	Y	
Part 3e	CO emissions during operation at less than 80 percent load (basis: BACT)	Y	
part 3f	CO emissions during operation at low ambient temperature (basis: BACT)	Y	
Part 4	Individual boiler NOx concentration limit averaged over a 3-hour period (basis: PSD, BACT)	Y	
part 6	NMHC/TSP Limit (basis: Cumulative increase)	Y	
part 8	Steam Injection (basis: BACT)	Y	<u>NA after installation date</u>
Part 9a	Continuous Emission Monitoring (basis: PSD, 2-1-403)	Y	<u>NA after installation date</u>
<u>Part 9b</u>	<u>Continuous Monitoring of Fuel Fired (basis: PSD, 2-1-403)</u>	<u>Y</u>	<u>Installation date</u>
part 11	CEM requirement (basis: PSD, BACT, 2-1-403)	Y	
part 13a	Stack height (basis: PSD)	Y	
part 13b	Sampling ports (basis: BAAQMD 1-501)	Y	
part 14	Recordkeeping (basis: PSD, BACT)	Y	
part 18	Hours of Operation (basis: Cumulative increase)	Y	

**Table IV-B
S-100 – GAS TURBINE**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Condition # 21961	PSD Permit		
III	Facilities Operation	Y	
V	Right to Entry	Y	
VI	Transfer of Ownership	Y	
VII	Severability	Y	
VIII	Other Applicable Regulations	Y	
IX, B	Air Pollution Control Equipment	Y	
<u>IX, B(i)</u>	<u>Air Pollution Control Equipment until the installation of the Dry Low NOx combustors.</u>	<u>Y</u>	<u>NA after installation date</u>
<u>IX, B(ii)</u>	<u>Air Pollution Control Equipment after the installation of the Dry Low NOx combustors.</u>	<u>N</u>	<u>Installation date</u>
IX, C	Emission Limits for NOx	Y	
IX, D	Performance Tests	Y	
IX, E	Continuous Emission Monitoring	Y	
<u>IX, E, 1(a)</u>	<u>Continuous Emission Monitoring until the installation of the Dry Low NOx combustors.</u>	<u>Y</u>	<u>NA after installation date</u>
<u>IX, E, 1(b)</u>	<u>Continuous Emission Monitoring after the installation of the Dry Low NOx combustors.</u>	<u>N</u>	<u>Installation date</u>
IX, G	New Source Performance Standards	Y	

¹ This section has been removed from BAAQMD Regulations because it has been superseded. Nevertheless, the source must comply with this regulation until US EPA has reviewed and approved (or disapproved) the District's revision of the regulation.

V. Schedule of Compliance

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10 which provides that a major facility review permit shall contain the following information and provisions:

“409.10 A schedule of compliance containing the following elements:

- 10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;
- 10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and
- 10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.”

Since the District has not determined that the facility is out of compliance with an applicable requirement, the schedule of compliance for this permit contains only sections 2-6-409.10.1 and 2-6-409.10.2.

No changes to this section are proposed in this action.

VI. Permit Conditions

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:

- **BACT:** This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- **Cumulative Increase:** This term is used for a condition imposed by the APCO which limits a source’s operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.
- **Offsets:** This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- **PSD:** This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit issued pursuant to Regulation 2, Rule 2.
- **TRMP:** This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District’s Toxic Risk Management Policy.

All changes to existing permit conditions are clearly shown in “strike-out/underline” format in the proposed permit. When the permit is issued, all ‘strike-out’ language will be deleted and all “underline” language will be retained, subject to consideration of comments received.

Additional monitoring has been added, where appropriate, to assure compliance with the applicable requirements.

Changes in this action

S-100 is subject to three separate conditions (14299, 2780, and 21961). As part of this permitting action conditions #2780 and #21961 are being modified to allow S-100 to operate with the new Dry Low NOx combustors. Currently the conditions require monitoring of the steam injection rate used for NOx control. These conditions will no longer be applicable once the new Dry Low NOx combustor is installed.

Condition 2780 has been modified in strikethrough/underline format to document the proposed changes in the condition text. Condition parts 1a and 1b have been divided into (i) and (ii) with one section applying to the existing equipment configuration and the second part applying to the unit with the Dry Low NOx combustor installed. Condition parts 1e and 1f have the SIP portions of Regulation 9, Rule 9 requirements added as the basis. As shown below condition part 8 will no longer apply after the installation of the new Dry Low NOx combustor. Part 9 has been divided into a and b with one section applying to the existing equipment configuration and the second part applying to the unit after the modification.

Condition 21961 has been modified in strikethrough/underline format to document the proposed changes in the condition text. Condition part IX. Special Conditions section B Air Pollution Control equipment has been divided into two sections with one part applying to the existing turbine and one part applying to the modified turbine. Condition part IX. Special Conditions section E Continuous Emission Monitoring has been divided into two sections with one part applying to the existing turbine and one part applying to the modified turbine.

COND# 2780 -----

Any condition that is preceded by an asterisk is not federally enforceable.

Calpine Gilroy Cogen, L. P.
Facility #B1180
PERMIT CONDITION #2780
(Amended August 29, 1987, June 27, 1989, September 13, 1990 [APPLICATION NO. 5140]; May, 1998 [Application #25841]; December, 1998 [Application #18872]; January, 2000 [Application #455]; November 2005 [Application # 13479]); December, 2010 [A#18434])

1a. (i)The oxides of nitrogen (NOx) concentration in the gas turbine exhaust shall not exceed 25 ppmvd at 15% oxygen averaged over any three-hour period. (BACT, PSD)

*(ii) Effective after the new Dry Low NOx combustor becomes operational, the oxides of nitrogen (NOx) concentration in the gas turbine exhaust shall not exceed 5 ppmvd at 15% oxygen or 0.15 lb/MW-hr averaged over any three-hour period excluding startup and shutdown periods. The Dry Low NOx

combustor shall be installed at the next scheduled major maintenance or no later than January 1, 2012.

(Basis: 9-9-301.2)

1b. (i) The limit in part 1a(i) shall not apply during cold start-up, which is not to exceed four hours, or shutdown procedure, which is not to exceed two hours. However, for daily start-ups after a shutdown of twelve (12) hours or less, the start-up period shall be limited to one (1) hour. (BACT)

*(ii) The limit in part 1a(ii) shall not apply during cold start-up, which is not to exceed four hours, or shutdown procedure, which is not to exceed two hours. However, for daily start-ups after a shutdown of twelve (12) hours or less, the start-up period shall be limited to one (1) hour. (BACT, 9-9-217, 9-9-218)

1c. During any mode of operation, the owner or operator shall inject steam for NO_x control at the turbine when steam of specified pressure and temperature is available. This part will no longer apply after the Dry Low NO_x combustor is installed and operational.

(BACT, PSD)

1d. (Deleted under BAAQMD Application #445)

1e. Effective after startup of the modification proposed in Application #445, the oxides of nitrogen (NO_x) concentration in the gas turbine exhaust shall not exceed 21.0 ppmvd at 15% oxygen averaged over any calendar day, excluding periods of startup or shutdown pursuant to Regulation 9-9-114 or periods of inspection and maintenance pursuant to Regulation 9-9-113.

(2-2-604, SIP 9-9-113, SIP 9-9-114, SIP 9-9-305, SIP 9-9-401)

1f. Mass emissions of NO_x at S-100, Gas Turbine, shall not exceed 323.7 tons per any consecutive twelve months. The permit holder shall install current Best Available Control Technology if this limit is exceeded or if the permit holder applies for a limit exceeding this limit. (BACT, SIP 9-9-305, 2-2-604)

1g. Mass emissions of NO_x at S-100, Gas Turbine, shall not exceed 1876 lb in any calendar day. (Regulation 2-2-301)

2. (Deleted under BAAQMD Title V application #25841)

3a. An oxidizing catalyst (A100) shall reduce CO emissions from the gas turbine (S-100). The catalyst shall operate during all periods of turbine operation except during start-up, which shall not exceed one hour for warm start, or four hours for a cold start. (9/98 BACT)

3b. Annual CO emissions shall not exceed 100 tons in any consecutive twelve months for sources S-100, S-101, and S-102. Sampling ports for testing for compliance with this condition shall be maintained as approved by the District's Source Test Section.
(6/27/89) (BACT)

3c. CO emissions in the gas turbine exhaust shall not exceed 10 ppmvd at 15% oxygen over any three- hour period.
(9/98 BACT)

3d. The limit in part 3c shall not apply during startup and shutdown periods. Emissions during startup and shutdown periods shall be limited to 14670 lbs per any consecutive twelve months. (6/27/89 BACT)

3e. The limit in part 3c shall not apply during operation at less than 80 percent load, which is not to exceed 750 hours in any consecutive twelve months. The emissions during operation at less than 80 percent load shall not exceed 14.8 tons per any consecutive twelve months. (9/98 BACT)

3f. The limit in part 3c shall not apply when ambient temperature is less than 35 degrees F. The CO limit when ambient temperature is less than 35 degrees F shall be 15 ppmvd, averaged over one hour. Operation at this alternate limit shall be limited to 100 hours in any consecutive twelve- month period. Emissions of CO while operating under this condition shall be limited to 3120 lbs. in any consecutive twelve-month period. (9/98 BACT)

3g. (Deleted under BAAQMD Application # 13479)

4. Nitrogen oxide (NOx) emissions from each auxiliary boiler (S-101, S-102) shall not exceed 40 ppmvd at 3% oxygen averaged over any three-hour period. (PSD, BACT)

5. (Deleted under BAAQMD Application # 13479)

6. Total emissions from the gas turbine (S-100) and

auxiliary boilers (S-101, S-102) shall not exceed 25 ton/year TSP or 40-ton/yr. NMHC.

6.a. As long as natural gas is burned exclusively at the turbine and boilers, particulate emissions shall not be monitored. (Cumulative increase)

6.b. (Deleted under BAAQMD Application # 13479)

6.c. (Deleted under BAAQMD Application # 13479)

7.a. (Deleted under BAAQMD Application # 13479)

7.b. (Deleted under BAAQMD Application # 13479)

8. The steam injection to control NO_x emissions from the turbine shall be operated during all periods when injection steam is available at the specified pressure and temperature. This part will no longer apply after the Dry Low NO_x combustor is installed and operational. (BACT)

9a. Pursuant to the PSD permit, the owner or operator shall install and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of steam injected to fuel fired in the turbine. This part shall apply until installation of the Dry Low NO_x combustor. (PSD, 2-1-403)

9b. Pursuant to the PSD permit, the owner or operator shall install and operate a continuous monitoring system to monitor and record the fuel fired in the turbine. This part shall apply after the installation of the Dry Low NO_x combustor. (PSD, 2-1-403)

10.a. (Deleted under BAAQMD Application # 13479)

10.b. (Deleted under BAAQMD Application # 13479)

11. The owner or operator shall install, calibrate and operate District approved continuous in-stack emission monitors for nitrogen oxides, carbon monoxide, and either oxygen or carbon dioxide at the turbine and the boilers. (PSD, BACT, 2-1-403)

12. (Deleted under BAAQMD Title V application #25841)

13a. The exhaust stack from the gas turbine (P-100) shall be constructed to a height of at least 80 feet. (PSD)

13b. Sampling ports for testing for compliance with these conditions shall be maintained as approved by the District's Source Test Division.

(BAAQMD 1-501)

14. All records associated with the above conditions shall be retained by the owner or operator, for at least five years, for review by the District and shall be supplied to the District upon request. The recording format shall be subject to the approval of the APCO. (PSD, BACT)

15. (Deleted under BAAQMD Application # 13479)

16. (Deleted under BAAQMD Title V application #25841)

17. (Deleted under BAAQMD Application # 13479)

18. The auxiliary boilers (S-101, S-102) shall not operate simultaneously with the gas turbine more than a combined total of 28 boiler hours/day or 3950 boiler hours/year. The auxiliary boilers may operate any time during period of gas turbine outage. (9/13/90) (Cumulative increase)

For S-100 - GAS TURBINE, S-101 AND S-102, BOILERS

Following are the PSD conditions imposed by EPA before construction in 1985 and amended by Applications 25841 in 1998 and 18434 in 2010.

I. (deleted BAAQMD Title V application #25841)

II. (deleted BAAQMD Title V application #25841)

III. Facilities Operation

All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this Approval to Construct/Modify shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. (PSD)

IV. (deleted BAAQMD Title V application #25841)

V. Right to Entry

The Regional Administrator, the head of the State Air Pollution Control Agency, the head of the responsible local air pollution control agency, and/or their authorized representatives, upon the presentation of credentials, shall be permitted:

- A. to enter upon the premises where the source is located or in which any records are required to be kept under the terms and conditions of this Approval to Construct/Modify; and
- B. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this Approval to Construct/Modify; and
- C. to inspect any equipment, operation, or method required in this Approval to Construct/Modify; and
- D. to sample emissions from the source. (PSD)

VI. Transfer of Ownership

In the event of any changes in control or ownership of facilities to be constructed or modified, this Approval to Construct/Modify shall be binding on all subsequent owners and operators. The applicant shall notify the succeeding owner and operator of the existence of this Approval to Construct/Modify and its conditions by letter, a copy of which shall be forwarded to the State and local Air Pollution Control Agency. (PSD)

VII. Severability

The provisions of this Approval to Construct/Modify are severable, and, if any provision of this Approval to Construct/Modify is held invalid, the remainder of this Approval to Construct/Modify shall not be affected thereby. (PSD)

VIII. Other Applicable Regulations

The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. (PSD)

IX. Special Conditions

A. (deleted BAAQMD Title V application #25841)

B. Air Pollution Control Equipment

- (i) On and after the date of startup of the S100, Turbine, the owner or operator shall install, continuously operate, and maintain a steam injection system to reduce emission of nitrogen oxides from the gas turbine. This condition shall apply until the installation of Dry Low NOx combustors pursuant to Application 18434, issued in December 2010.
- (ii) On and after the date of installation of Dry Low NOx combustors at S100, Turbine, pursuant to Application 18434, the owner or operator shall use the

Dry Low NOx combustors to reduce emission of nitrogen oxides from the gas turbine.

C. Emission Limits for NOX

On and after the date of startup of the gas turbine, the owner or operator shall not discharge or cause the discharge into the atmosphere NOX in excess of 25 ppmv at 15% O2 (3-hour average). (PSD)

This limit shall not apply during cold start-up, which is not to exceed four hours, or shutdown procedure, which is not to exceed two hours. However, for daily start-ups after a shutdown of twelve (12) hours or less, the start-up period shall be limited to one (1) hour.

On and after the date of startup of the auxiliary boilers, the owner or operator shall not discharge or cause the discharge into the atmosphere NOX in excess of 40 ppmv at 3% O2 (3-hour average). (PSD)

D. Performance Tests

1. The owner or operator shall conduct performance tests for NOX and furnish the Bay Area Air Quality Management District and the EPA a written report of the results of such tests upon written request of EPA or the District. Any test for NOX shall be conducted at the maximum capacity of the emission unit being tested. (PSD)
2. Performance tests for the emissions of NOx, shall be conducted and the results reported in accordance with the test method set forth in 40 CFR 60, Part 60.8 and Appendix A. Performance tests for the emission of NOX shall be conducted using EPA Methods 7 and 20. (PSD)

The EPA (Attn: A-3-3) shall be notified in writing at least 30 days prior to such tests to allow time for the development of an approvable performance test plan and to arrange for an observer to be present at the test. (PSD)

Such prior approval shall minimize the possibility of EPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the EPA. (PSD)

E. Continuous Emission Monitoring

1. Prior to the date of startup and thereafter, the owner or operator shall install, maintain and operate the following continuous monitoring systems in the heat recovery steam generator exhaust stack:
 - a. Continuous monitoring systems to measure stack gas NOX concentration, fuel usage, steam-to-fuel ratio, and either O2 or CO2 concentrations. The systems shall meet EPA monitoring performance specifications (40 CFR 60.13

and 40 CFR 60, Appendix B, Performance Specifications). Part 1.a shall apply until the installation of Dry Low NO_x combustors pursuant to Application 18434, issued in December 2010. (PSD)

b. Continuous monitoring systems to measure stack gas NO_x concentration, fuel usage, and either O₂ or CO₂ concentrations. The systems shall meet EPA monitoring performance specifications. Part 1.b shall apply after the installation of Dry Low NO_x combustors pursuant to Application 18434, issued in December 2010. (40 CFR 60.13 and 40 CFR 60, Appendix B, Performance Specifications). (PSD)

2. The owner or operator shall maintain a file of all measurements, including continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by 40 CFR 60 recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurement, maintenance, reports and records. (PSD)
3. The owner or operator shall submit a written report of all excess emissions to EPA (Attn: A-3-3) for every calendar quarter. The report shall include the following:
 - a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factors used, and the date and time of commencement and completion of each time period of excess emissions. (PSD)
 - b. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns and malfunctions of the cogeneration gas turbine system. The nature and cause of any malfunction (if known) and the corrective action taken or preventive measures adopted shall also be reported. (PSD)
 - c. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments. (PSD)
 - d. When no excess emission have occurred or the continuous monitoring system has not been inoperative, repaired, or adjusted, such information shall be stated in the report. (PSD)
 - e. Excess emissions shall be defined as any three-hour period during which the average emissions of NO_x, as measured by the continuous monitoring system, exceeds the NO_x maximum emission limits set forth in Conditions IX. C. (PSD)

4. Excess emission indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. (PSD)

F. (Deleted under BAAQMD Title V application # 6748)

G. New Source Performance Standards

The proposed facility is subject to the Federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. (PSD)

VII. Applicable Limits and Compliance Monitoring Requirements

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of monitoring, and type of monitoring. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

The District has reviewed all monitoring and has determined the existing monitoring is adequate with any exceptions noted in the Statement of Basis prepared for the Title V Renewal Application No. 6748.

Discussion of Other Limits:

The permit contains other limits, such as HAP limits, hours of operation, and heat input. There is adequate monitoring for these limits in the standards or permit conditions.

Changes in this action

**Table VII-B
S-100 – GAS TURBINE**

Type of limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
NO _x	SIPBAAQMD 9-9-305 and 9-9-401	Y		≤ 21.0 ppmv* @ 15% O ₂ , dry, 3-hr average *corrected for efficiency	BAAQMD 9-9-501	C	CEMS
	BAAQMD 9-9-301.1.3	<u>N</u>		<u>< 15.0 ppmv* @ 15% O₂, dry, 3-hr average</u>	<u>9-9-501</u>	<u>C</u>	<u>CEMS</u>
	BAAQMD 9-9-301.2	<u>N</u>	<u>After DLN Installed (by 1/1/2012)</u>	<u>< 5.0 ppmv* @ 15% O₂, dry, 3-hr average</u>	<u>9-9-501</u>	<u>C</u>	<u>CEMS</u>
	BAAQMD Permit Cond# 2780 part 1a	Y		≤ 25 ppmv @ 15% O ₂ , 3-hr avg.	BAAQMD Permit Condition 2780, part 11	C	CEMS
	BAAQMD Permit Cond# 2780 part 1e	Y	Upon completion of modification	≤ 21.0 ppmv @ 15% O ₂ , dry, calendar day average	BAAQMD 9-9-501	C	CEMS
NO _x	BAAQMD Permit Cond# 2780 part 1f	Y		< 323.7 tons per any twelve consecutive months	BAAQMD 9-9-501	C	CEMS
	BAAQMD Permit Cond# 2780 part 1g	Y		< 1876 lb per calendar day	BAAQMD 9-9-501	C	CEMS
	BAAQMD permit condition # 21961, part IX-C.	Y		≤ 25 ppmv @ 15% O ₂ , dry 3-hr average	BAAQMD 9-9-501	C	CEMS

**Table VII-B
S-100 – GAS TURBINE**

Type of limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
NOx	BAAQMD permit condition # 21961, part IX-C.	Y		Natural Gas or Fuel Oil ≤ 25 ppmv @ 15% O ₂ , dry 3-hr average	BAAQMD permit condition # 21961, part IX-E.	C	CEMS
NOX	NSPS, 40 CFR 60.332 (a)(1)	Y		82 ppmv @ 15% O ₂ , dry 4-hour rolling average (Arithmetic average of the average NOx concentration measured by the CEMS for a given hour and the three unit operating hour average NOx concentrations immediately preceding that unit operating hour)	NSPS, 40 CFR 60.334 (b)	C	CEMS
	None	Y		None	40 CFR 75.10	C	CEMS
POC	BAAQMD Permit Condition 2780 part 6	Y		< 40 TPY NMHC for S-100, S-101, S-102		N	
SO ₂	None	Y		None	40 CFR 75.11, 40 CFR 75, Appendix D, part 2.3		Fuel measurements, calculations
SO ₂	BAAQMD 9-1-301	Y		GLC ¹ of 0.5 ppm for 3 min or 0.25 ppm for 60 min or 0.05 ppm for 24 hours		N	
SO ₂	BAAQMD 9-1-302	Y		300 ppm (dry)		N	

**Table VII-B
S-100 – GAS TURBINE**

Type of limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
SO ₂	NSPS 40 CFR 60.333 (a) or 60.333(b)	Y		SO ₂ in gases exiting turbine ≤ 0.015% (vol.) @ 15% O ₂ (dry) or Total sulfur in fuel combusted in turbines ≤ 0.8% by wt. (8000 ppmw)	NSPS, 40 CFR 60.334 (h)(1)	P/D	Determine total sulfur content of the fuel fired in turbines using total sulfur methods described in 40 CFR 60.335(b)(10)
Opacity	BAAQMD 6-301	Y		> Ringelmann No. 1 for no more than 3 minutes in any hour		N	
FP	BAAQMD 6-310	Y		0.15 grain/dscf		N	
FP	BAAQMD Permit Condition 2780 part 6	Y		< 25 TPY total FP for S-100, S-101, S-102		N	
CO ₂		Y		None	40 CFR 75.10	C	CEMS (CO ₂) or CEMS (O ₂) or fuel flow monitor
Carbon Monoxide	BAAQMD Permit Condition 2780 part 3b	Y		emissions < 100 tons/yr (for S-100, S-101, and S-102)	BAAQMD Permit Condition 2780 part 11	C	CEMS
Carbon Monoxide	BAAQMD Permit Condition 2780 part 3c	Y		10 ppmvd @ 15% O ₂ , 3-hr average, except during startup, shutdown, operation at < 80% load, and operation at low ambient temperature	BAAQMD Permit Condition 2780 part 11	C	CEMS
Carbon Monoxide	BAAQMD Permit Condition 2780 part 3d	Y		< 14670 lbs. CO during startups and shutdowns per any consecutive 12-month period	BAAQMD Permit Condition 2780 part 11	C	CEMS

**Table VII-B
S-100 – GAS TURBINE**

Type of limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
	BAAQMD Permit Condition 2780 part 3e	Y		< 750 hours of operation at < 80% load per any consecutive 12-month period	BAAQMD Permit Condition 2780 part 11	C	CEMS
Carbon Monoxide	BAAQMD Permit Condition 2780 part 3e	Y		< 14.8 tons CO during operation at < 80% load per any consecutive 12-month period	BAAQMD Permit Condition 2780 part 11	C	CEMS
Carbon Monoxide	BAAQMD Permit Condition 2780 part 3f	Y		< 100 hours of operation at ambient temperatures < 35° F. per any consecutive 12-month period	BAAQMD Permit Condition 2780 part 11	C	CEMS
Carbon Monoxide	BAAQMD Permit Condition 2780 part 3f	Y		15 ppmvd @ 15% O ₂ , 1-hr average, during operation at low ambient temperature	BAAQMD Permit Condition 2780 part 11	C	CEMS

¹ Ground Level Concentration

VIII. Test Methods

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not applicable requirements.

If a rule or permit condition requires ongoing testing, the requirement will also appear in Section IV of the permit.

No changes to this section are proposed in this action.

IX. Permit Shield:

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in a major facility review permit explaining that specific federally enforceable regulations and standards do not apply to a source or group of sources, or (2) A provision in a major facility review permit explaining that specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting are subsumed because

other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA's White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program. The District uses the second type of permit shield for all streamlining of monitoring, recordkeeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

No changes to this section are proposed in this action.

X. Revision History

This section contains the details of issuance and revisions for each permit.

XI. Glossary

This section contains terms that may be unfamiliar to the general public or EPA.

No changes to this section are proposed in this action.

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

F. Differences between the Application and the Proposed Permit:

There are no differences between the application and the proposed permits.

APPENDIX A

GLOSSARY

ACT

Federal Clean Air Act

APCO

Air Pollution Control Officer

ARB

Air Resources Board

BAAQMD

Bay Area Air Quality Management District

BACT

Best Available Control Technology

Basis

The underlying authority which allows the District to impose requirements.

CAA

The federal Clean Air Act

CAAQS

California Ambient Air Quality Standards

CAPCOA

California Air Pollution Control Officers Association

CEM

Continuous Emission Monitor

CEQA

California Environmental Quality Act

CFR

The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

CO

Carbon Monoxide

Cumulative Increase

The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Cumulative increase is used to determine whether threshold-based requirements are triggered.

District

The Bay Area Air Quality Management District

dscf

Dry Standard Cubic Feet

EPA

The federal Environmental Protection Agency.

Excluded

Not subject to any District regulations.

FDOC

Final Determination of Compliance (FDOC), prepared pursuant to District Regulation 2, Rule 3, Power Plants.

Federally Enforceable, FE

All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60 (NSPS), Part 61 (NESHAPs), Part 63 (MACT), and Part 72 (Permits Regulation, Acid Rain), including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

FP

Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

HAP

Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by 40 CFR Part 63.

HRSG

Heat Recovery Steam Generator

Major Facility

A facility with potential emissions of: (1) at least 100 tons per year of regulated air pollutants, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

MFR

Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Federal Clean Air Act and implemented by District Regulation 2, Rule 6.

MOP

The District's Manual of Procedures.

NAAQS

National Ambient Air Quality Standards

NESHAPS

National Emission Standards for Hazardous Air Pollutants. See in 40 CFR Parts 61 and 63.

NMHC

Non-methane Hydrocarbons (Same as NMOC)

NMOC

Non-methane Organic Compounds (Same as NMHC)

NO_x

Oxides of nitrogen.

NSPS

Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. Mandated by Title I, Section 111 of the Federal Clean Air Act, and implemented by 40 CFR Part 60 and District Regulation 10.

NSR

New Source Review. A federal program for pre-construction review and permitting of new and modified sources of pollutants for which criteria have been established in accordance with Section 108 of the Federal Clean Air Act. Mandated by Title I of the Federal Clean Air Act and implemented by 40 CFR Parts 51 and 52 and District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

Offset Requirement

A New Source Review requirement to provide federally enforceable emission offsets for the emissions from a new or modified source. Applies to emissions of POC, NO_x, PM₁₀, and SO₂.

Phase II Acid Rain Facility

A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 40 CFR 72 from Titles IV and V of the Clean Air Act.

POC

Precursor Organic Compounds

PM

Particulate Matter

PM₁₀

Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns

PSD

Prevention of Significant Deterioration. A federal program for permitting new and modified sources of those air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

PUC

Public Utilities Commission (California)

SIP

State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

SO₂

Sulfur dioxide

THC

Total Hydrocarbons (NMHC + Methane)

Title V

Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

TOC

Total Organic Compounds (NMOC + Methane, Same as THC)

TPH

Total Petroleum Hydrocarbons

TRMP

Toxic Risk Management Plan

TSP

Total Suspended Particulate

VOC

Volatile Organic Compounds

Units of Measure:

bhp	=	brake-horsepower
btu	=	British Thermal Unit
cfm	=	cubic feet per minute
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m ²	=	square meter
min	=	minute
mm	=	million
MMbtu	=	million btu
MMcf	=	million cubic feet
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute
yr	=	year

APPENDIX B

PERMIT EVALUATION FOR APPLICATION 18434

**Engineering Evaluation
Calpine Gilroy Cogen, LP & Gilroy Energy Center, LLC
1400 Pacheco Pass Hwy
Gilroy, CA 95020
Plant No. 11180
Application No. 18434**

BACKGROUND

Calpine Gilroy is installing Dry Low NO_x Combustors on the following source to meet Regulation 9, Rule 9, requirements that were adopted on December 6, 2006:

S-100 GE Frame 7 Gas Turbine Generator, Rated @ 87MW
Turbine, Cogeneration, 1085MM BTU/hr max,
Natural gas, 7 days/wk

Calpine is currently controlling the NO_x emissions from the turbine with steam injection. After the Dry Low NO_x Combustors are installed, the steam injection equipment will no longer be used.

The deadline to meet lower emission limits is January 1, 2010 unless the facility must install new control equipment. In that case, Section 9-9-402.2 allows compliance at the next scheduled major maintenance or January 1, 2012, whichever is earlier. The facility currently plans to install the new Dry Low NO_x Combustors in April of 2011.

EMISSIONS SUMMARY

There is no emissions increase associated with this application. The turbine is subject to a number of BACT, NSPS, and Regulation 9, Rule 9, limits. Prior to the December 6, 2006 rule revision, the lowest NO_x limit was 21 ppmv @ 15% O₂. The new limit is 5 ppmv @ 15% O₂ or 0.15 lb/MW, which is approximately 25% of the old limit.

Toxic Risk Screening:

There is no emissions increase associated with this application. This application does not require a Risk Screening Analysis under Regulation 2, Rule 5.

STATEMENT OF COMPLIANCE

BAAQMD and SIP Regulations 9, Rule 9, Nitrogen Oxides from Stationary Gas Turbines.

Calpine Gilroy is installing the Dry Low NO_x Combustors on S-100, Turbine, to meet Regulation 9, Rule 9, Section 301.2 requirements that were adopted on December 6, 2006. The new combustor will achieve a NO_x limit of 0.15 lb/MW-hr or 5 ppmvd.

Calpine is currently controlling the NOx emissions from the turbine with steam injection. After the Dry Low NOx Combustors are installed, the steam injection equipment will no longer be used.

The deadline to meet lower emission limits is January 1, 2010 unless the facility must install new control equipment. In that case, Section 9-9-402.2 allows compliance at the next scheduled major maintenance or January 1, 2012, whichever is earlier. The facility currently plans to install the new Dry Low NOx Combustors in April of 2011.

The owner/operator of S-100 shall comply with the revised Permit Conditions No. 2780 and No. 21961 and continue to comply with the unrevised Permit Condition No. 14299. Permit Condition No. 21961 is a PSD condition.

SIP Regulation 9, Rule 9, is based on the rule that the District adopted on September 21, 1994. This rule was approved into the SIP on December 15, 1997. The Federal Register citation is 62 FR 65611.

The SIP rule is federally enforceable; the new District rule is not.

Part 1e of Condition 2780, which contains the older, higher NOx limit, is being retained because it is federally enforceable. If the new regulation is approved into the SIP, part 1e will be deleted.

CEQA

The project is considered to be categorically exempt under District CEQA Regulation 2-1-312.2 and 2-1-312.3.

2-1-312 Other Categories of Exempt Projects: In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.

312.1 Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.

312.2 Permit applications to install air pollution control or abatement equipment.

312.3 Permit applications for projects undertaken for the sole purpose of bringing an existing facility into compliance with newly adopted regulatory requirements of the District or of any other local, state or federal agency.

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

Best Available Control Technology:

This application does not trigger BACT.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application per Regulation 2-2-302.

PSD, NSPS, NESHAPS

S-100 is subject to the PSD permit program. Conditions No. 2780 and 21961 contain PSD permit requirements for S-100. The PSD conditions are being revised under this application because they require steam injection and associated monitoring. After the Dry Low NOx combustors are installed on S-100, steam injection will no longer be required for NOx control. The NOx emissions will be monitored by the existing CEM.

The PSD permit for the Gilroy facility has been delegated to the District by the EPA in the latest PSD delegation agreement dated February 4, 2008 (See page 6). Under the delegation agreement, District permits issued in accordance with Regulation 2, Rule 2 shall be deemed to meet federal PSD requirements. In this permitting action PSD is not triggered since there is no emissions increase of a PSD pollutant.

The District may make changes to the PSD permit conditions in accordance with Regulation 2, Rule 2 requirements. The District is also making changes to the PSD permit conditions in accordance with a 1985 policy memorandum from Darryl D. Tyler to EPA Air Division Directors dated July 5, 1985 regarding Revised Draft Policy on Permit Modifications and Extensions. The memorandum describes the policy towards administrative changes or amendments to the PSD permit after appropriate review has been conducted. The changes to the permit conditions in this permitting action meet the definition of an administrative change or amendment. An administrative change or amendment involves no increase in either emissions or impacts and no fundamental change in either the source or one of the emission units at the source. Application or permit revisions may be necessary, but additional review or analysis would not normally be required; examples are typographical and company name changes. One exception is the extension of commence construction dates, which may require a limited additional review consisting of BACT reanalysis and public participation.

District staff also consulted with EPA Region 9 on the approach to modifying the PSD permit conditions described in this evaluation. A copy of the draft engineering evaluation was emailed to Shaheerah Kelly of EPA Region 9 on July 15, 2010. Shaheerah reviewed the document and had Gerardo Rios of EPA Region 9 review the document. On December 14, 2010 Shaheerah contacted Brian Lusher by phone and stated that EPA Region 9 agreed that the District had discretion under the delegation agreement on how to process the PSD permit changes for the Calpine Gilroy facility. EPA Region 9 staff reviewed the District approach to the PSD permit changes and did not provide any additional guidance on how to process the

changes to the PSD permit. The District has met the requirements of the delegation agreement to consult with EPA Region 9 on such issues.

S-100 is subject to NSPS Subpart GG (2/24/06) and meets all substantive requirements including the NO_x limit of 103 ppm contained in 60.332(a)(1), and the standard for sulfur dioxide of 0.015% by volume at 15%O₂ contained in 60.333.

Please note that the heat rate used to calculate the NSPS Subpart GG NO_x limit was 10.473 KJ/watt-hr (9929 Btu/kWh). This was the latest heat rate available as of June 2010.

NESHAPS does not apply because the facility is not a major source of HAPs.

Title V

This facility is subject to BAAQMD Regulation 2, Rule 6, Major Facility Review, and has an existing Major Facility Review (Title V) permit. Changes to the District permit may require revisions to the Major Facility Review permit. In this case, since the description of S-100 and conditions 2780 and 21961 are being changed, the Major Facility Review permit must be revised.

Revisions to the Major Facility Review permit can be classified as administrative amendments, minor revisions, significant revisions, and reopenings. Reopening are initiated by the District or EPA when necessary to correct mistakes. Administrative amendments and significant revisions are defined in Sections 2-6-201 and 2-6-226, respectively. All other revisions are minor revisions.

Significant revisions and reopenings require public notice and may require a public hearing. Administrative amendments require no review by EPA or the public. Minor revisions require a 45-day EPA review period, but are not subject to public notice.

The new NO_x limit in BAAQMD Regulation 9, Rule 9, is an administrative amendment because the new limit is not in the California State Implementation Plan and is therefore not federally enforceable. The inclusion or revision of non-federally enforceable requirements is defined by Section 2-6-201 as an administrative amendment.

However, the facility will achieve the limit by installing new Dry Low NO_x combustors and discontinuing the use of steam injection, which is required by Condition 2780 and PSD condition 21961. This revision meets the definition of a minor revision because it is not a significant revision as defined by Section 2-6-226 as follows:

- 2-6-226 Significant Permit Revision:** Any revision to a federally enforceable condition contained in a major facility review permit that can be defined as follows:
- 226.1 The incorporation of a change considered a major modification under 40 CFR Parts 51 (NSR) or 52 (PSD);
 - 226.2 The incorporation of a change considered a modification under 40 CFR Parts 60 (NSPS), 61 (NESHAPS), or Section 112 of the Clean Air Act (HAP);
 - 226.3 Any significant change or relaxation of any applicable monitoring, reporting or recordkeeping condition;
 - 226.4 The establishment of or change to a permit term or condition allowing a facility to avoid an applicable requirement, including:

- 4.1 a federally enforceable emission limit assumed in order to avoid classification as a modification under any provision of Title I of the federal Clean Air Act, or
- 4.2 an alternative hazardous air pollutant emission limit pursuant to Section 112(i)(5) of the Clean Air Act;
- 226.5 The establishment of or change to a case-by-case determination of any emission limit or other standard;
- 226.6 The establishment of or change to a facility-specific determination for ambient impacts, visibility analysis, or increment analysis on portable sources; or
- 226.7 The incorporation of any requirement promulgated by the U. S. EPA under the authority of the Clean Air Act provided that three or more years remain on the permit term.

The District will submit the minor revision to EPA for review after the District Authority to Construct is issued.

Federal Enforceability

Every requirement in the Major Facility Review permit must be designated as federally enforceable or non-federally enforceable in accordance with the California Health and Safety Code § 42301.12(a)(3). Therefore, the new limit will be designated non-federally enforceable. The existing limits will continue to be federally enforceable. Each non-federally enforceable permit condition is designated as such by an asterisk (*).

Monitoring Analysis

Major Facility Review permits require a review of monitoring. The only limit that is changing in the permit is the NO_x limit for S-100, so only the NO_x monitoring is being reviewed.

NO_x is monitored at S-100 by a NO_x CEM, which is considered to be appropriate continuous monitoring for NO_x. After the Dry Low NO_x combustors are installed, the steam injection will not exist and the rate of steam injection will no longer be monitored.

Steam or water is considered to be a control device for the purposes of 40 CFR 64, Compliance Assurance Monitoring (CAM). However, this turbine is exempt from CAM in accordance with §64.2(b)(vi) because the Major Facility Review permit requires the NO_x CEM. After the steam injection is dismantled, the turbine will also be exempt because it will have no longer have an add on NO_x control device.

PERMIT CONDITIONS

Conditions for S-100

COND# 14299 -----

1. The owner/operator shall ensure that sources S-100, Gas Turbine, and S-101 & S-102, Boilers exclusively combust no other fuel in them except for natural gas. (basis: 2-1-403)

Modified Permit Condition No. 2780. Changes in underline/stikethrough format.

COND# 2780 -----

Any condition that is preceded by an asterisk is not federally enforceable.

Calpine Gilroy Cogen, L. P.
Facility #B1180
PERMIT CONDITION #2780
(Amended August 29, 1987, June 27, 1989, September 13, 1990 [APPLICATION NO. 5140]; May, 1998 [Application #25841]; December, 1998 [Application #18872]; January, 2000 [Application #455]; November 2005 [Application # 13479]); December, 2010 [A#18434]

1a. (i) The oxides of nitrogen (NOx) concentration in the gas turbine exhaust shall not exceed 25 ppmvd at 15% oxygen averaged over any three-hour period. (BACT, PSD)

*(ii) Effective after the new Dry Low NOx combustor becomes operational, the oxides of nitrogen (NOx) concentration in the gas turbine exhaust shall not exceed 5 ppmvd at 15% oxygen or 0.15 lb/MW-hr averaged over any three-hour period excluding startup and shutdown periods. The Dry Low NOx combustor shall be installed at the next scheduled major maintenance or no later than January 1, 2012.

(Basis: 9-9-301.2)

1b. (i) The limit in part 1a(i) shall not apply during cold start-up, which is not to exceed four hours, or shutdown procedure, which is not to exceed two hours. However, for daily start-ups after a shutdown of twelve (12) hours or less, the start-up period shall be limited to one (1) hour. (BACT)

*(ii) The limit in part 1a(ii) shall not apply during cold start-up, which is not to exceed four hours, or shutdown procedure, which is not to exceed two hours. However, for daily start-ups after a shutdown of twelve (12) hours or less, the start-up period shall be limited to one (1) hour. (BACT, 9-9-217, 9-9-218)

1c. During any mode of operation, the owner or operator shall inject steam for NOx control at the turbine when steam of specified pressure and temperature is available. This part will no longer apply after the Dry Low NOx combustor is installed and operational.

(BACT, PSD)

1d. (Deleted under BAAQMD Application #445)

1e. Effective after startup of the modification proposed in Application #445, the oxides of nitrogen (NO_x) concentration in the gas turbine exhaust shall not exceed 21.0 ppmvd at 15% oxygen averaged over any calendar day, excluding periods of startup or shutdown pursuant to Regulation 9-9-114 or periods of inspection and maintenance pursuant to Regulation 9-9-113. (2-2-604, SIP 9-9-113, SIP 9-9-114, SIP 9-9-305, SIP 9-9-401)

1f. Mass emissions of NO_x at S-100, Gas Turbine, shall not exceed 323.7 tons per any consecutive twelve months. The permit holder shall install current Best Available Control Technology if this limit is exceeded or if the permit holder applies for a limit exceeding this limit. (BACT, SIP 9-9-305, 2-2-604)

1g. Mass emissions of NO_x at S-100, Gas Turbine, shall not exceed 1876 lb in any calendar day. (Regulation 2-2-301)

2. (Deleted under BAAQMD Title V application #25841)

3a. An oxidizing catalyst (A100) shall reduce CO emissions from the gas turbine (S-100). The catalyst shall operate during all periods of turbine operation except during start-up, which shall not exceed one hour for warm start, or four hours for a cold start. (9/98 BACT)

3b. Annual CO emissions shall not exceed 100 tons in any consecutive twelve months for sources S-100, S-101, and S-102. Sampling ports for testing for compliance with this condition shall be maintained as approved by the District's Source Test Section. (6/27/89) (BACT)

3c. CO emissions in the gas turbine exhaust shall not exceed 10 ppmvd at 15% oxygen over any three- hour period. (9/98 BACT)

3d. The limit in ~~paragraph part~~ 3c shall not apply during startup and shutdown periods. Emissions during startup and shutdown periods shall be limited to 14670 lbs per any consecutive twelve months. (6/27/89 BACT)

3e. The limit in ~~paragraph part~~ 3c shall not apply during operation at less than 80 percent load, which is not to exceed 750 hours in any consecutive twelve months. The emissions during operation at less than 80 percent load shall not exceed 14.8 tons per any consecutive twelve months. (9/98 BACT)

3f. The limit in ~~paragraph part~~ 3c shall not apply when ambient temperature is less than 35 degrees F. The CO limit when ambient temperature is less than 35 degrees F shall be 15 ppmvd, averaged over one hour. Operation at this alternate limit shall be limited to 100 hours in any consecutive twelve- month period. Emissions of CO while operating under this condition shall be limited to 3120 lbs. in any consecutive twelve-month period. (9/98 BACT)

3g. (Deleted under BAAQMD Application # 13479)

4. Nitrogen oxide (NO_x) emissions from each auxiliary boiler (S-101, S-102) shall not exceed 40 ppmvd at 3% oxygen averaged over any three-hour period. (PSD, BACT)

5. (Deleted under BAAQMD Application # 13479)

6. Total emissions from the gas turbine (S-100) and auxiliary boilers (S-101, S-102) shall not exceed 25 ton/year TSP or 40-ton/yr. NMHC.

6.a. As long as natural gas is burned exclusively at the turbine and boilers, particulate emissions shall not be monitored. (Cumulative increase)

6.b. (Deleted under BAAQMD Application # 13479)

6.c. (Deleted under BAAQMD Application # 13479)

7.a. (Deleted under BAAQMD Application # 13479)

7.b. (Deleted under BAAQMD Application # 13479)

8. The steam injection to control NO_x emissions from the turbine shall be operated during all periods when injection steam is available at the specified pressure and temperature. This part will no longer apply after the Dry Low NO_x combustor is installed and operational. (BACT)

9a. Pursuant to the PSD permit, the owner or operator shall install and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of steam injected to fuel fired in the turbine. This part shall apply until installation of the Dry Low NO_x combustor. (PSD, 2-1-403)

9b. Pursuant to the PSD permit, the owner or operator shall install and operate a continuous monitoring system to monitor and record the ~~fuel consumption and the ratio of steam injected to~~ fuel fired in the turbine. This part shall apply after the installation of the Dry Low NO_x combustor. (PSD, 2-1-403)

10.a. (Deleted under BAAQMD Application # 13479)

10.b. (Deleted under BAAQMD Application # 13479)

11. The owner or operator shall install, calibrate and operate District approved continuous in-stack emission monitors for nitrogen oxides, carbon monoxide, and either oxygen or carbon dioxide at the turbine and the boilers. (PSD, BACT, 2-1-403)

12. (Deleted under BAAQMD Title V application #25841)

13a. The exhaust stack from the gas turbine (P-100) shall be constructed to a height of at least 80 feet. (PSD)

13b. Sampling ports for testing for compliance with these conditions shall be maintained as approved by the District's Source Test Division.
(BAAQMD 1-501)

14. All records associated with the above conditions shall be retained by the owner or operator, for at least five years, for review by the District and shall be supplied to the District upon request. The recording format shall be subject to the approval of the APCO. (PSD, BACT)

15. (Deleted under BAAQMD Application # 13479)

16. (Deleted under BAAQMD Title V application #25841)

17. (Deleted under BAAQMD Application # 13479)

18. The auxiliary boilers (S-101, S-102) shall not operate simultaneously with the gas turbine more than a combined total of 28 boiler hours/day or 3950 boiler hours/year. The auxiliary boilers may operate any time during period of gas turbine outage. (9/13/90)
(Cumulative increase)

Condition # 21961:

For S-100 - GAS TURBINE, S-101 AND S-102, BOILERS

Following are the PSD conditions imposed by EPA before construction in 1985 and amended by Applications 25841 in 1998 and 18434 in 2010.

- I. (deleted BAAQMD Title V application #25841)
- II. (deleted BAAQMD Title V application #25841)
- III. Facilities Operation

All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this Approval to Construct/Modify shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. (PSD)

- IV. (deleted BAAQMD Title V application #25841)

V. Right to Entry

The Regional Administrator, the head of the State Air Pollution Control Agency, the head of the responsible local air pollution control agency, and/or their authorized representatives, upon the presentation of credentials, shall be permitted:

- A. to enter upon the premises where the source is located or in which any records are required to be kept under the terms and conditions of this Approval to Construct/Modify; and
- B. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this Approval to Construct/Modify; and
- C. to inspect any equipment, operation, or method required in this Approval to Construct/Modify; and
- D. to sample emissions from the source. (PSD)

VI. Transfer of Ownership

In the event of any changes in control or ownership of facilities to be constructed or modified, this Approval to Construct/Modify shall be binding on all subsequent owners and operators. The applicant shall notify the succeeding owner and operator of the existence of this Approval to Construct/Modify and its conditions by letter, a copy of which shall be forwarded to the State and local Air Pollution Control Agency. (PSD)

VII. Severability

The provisions of this Approval to Construct/Modify are severable, and, if any provision of this Approval to Construct/Modify is held invalid, the remainder of this Approval to Construct/Modify shall not be affected thereby. (PSD)

VIII. Other Applicable Regulations

The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable Federal, State and local air quality regulations. (PSD)

IX. Special Conditions

~~A. (deleted BAAQMD Title V application #25841)~~

B. Air Pollution Control Equipment

- (iii) On and after the date of startup of the S100, Turbine, the owner or operator shall install, continuously operate, and maintain a steam injection system to reduce emission of nitrogen oxides from the gas turbine. This condition shall apply until the installation of Dry Low NO_x combustors pursuant to Application 18434, issued in December 2010.
- (iv) On and after the date of installation of Dry Low NO_x combustors at S100, Turbine, pursuant to Application 18434, the owner or operator shall use the Dry Low NO_x combustors to reduce emission of nitrogen oxides from the gas turbine.

C. Emission Limits for NOX

On and after the date of startup of the gas turbine, the owner or operator shall not discharge or cause the discharge into the atmosphere NOX in excess of 25 ppmv at 15% O₂ (3-hour average). (PSD)

This limit shall not apply during cold start-up, which is not to exceed four hours, or shutdown procedure, which is not to exceed two hours. However, for daily start-ups after a shutdown of twelve (12) hours or less, the start-up period shall be limited to one (1) hour.

On and after the date of startup of the auxiliary boilers, the owner or operator shall not discharge or cause the discharge into the atmosphere NOX in excess of 40 ppmv at 3% O₂ (3-hour average). (PSD)

D. Performance Tests

1. The owner or operator shall conduct performance tests for NOX and furnish the Bay Area Air Quality Management District and the EPA a written report of the results of such tests upon written request of EPA or the District. Any test for NOX shall be conducted at the maximum capacity of the emission unit being tested. (PSD)
2. Performance tests for the emissions of NOx, shall be conducted and the results reported in accordance with the test method set forth in 40 CFR 60, Part 60.8 and Appendix A. Performance tests for the emission of NOX shall be conducted using EPA Methods 7 and 20. (PSD)

The EPA (Attn: A-3-3) shall be notified in writing at least 30 days prior to such tests to allow time for the development of an approvable performance test plan and to arrange for an observer to be present at the test. (PSD)

Such prior approval shall minimize the possibility of EPA rejection of test results for procedural deficiencies. In lieu of the above mentioned test methods, equivalent methods may be used with prior written approval from the EPA. (PSD)

E. Continuous Emission Monitoring

1. Prior to the date of startup and thereafter, the owner or operator shall install, maintain and operate the following continuous monitoring systems in the heat recovery steam generator exhaust stack:
 - a. Continuous monitoring systems to measure stack gas NOX concentration, fuel usage, steam-to-fuel ratio, and either O2 or CO2 concentrations. The systems shall meet EPA monitoring performance specifications (40 CFR 60.13 and 40 CFR 60, Appendix B, Performance Specifications). Part 1.a shall apply until the installation of Dry Low NOx combustors pursuant to Application 18434, issued in December 2010. (PSD)
 - b. Continuous monitoring systems to measure stack gas NOX concentration, fuel usage, and either O2 or CO2 concentrations. The systems shall meet EPA monitoring performance specifications. Part 1.b shall apply after the installation of Dry Low NOx combustors pursuant to Application 18434, issued in December 2010. (40 CFR 60.13 and 40 CFR 60, Appendix B, Performance Specifications). (PSD)
2. The owner or operator shall maintain a file of all measurements, including continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by 40 CFR 60 recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurement, maintenance, reports and records. (PSD)

3. The owner or operator shall submit a written report of all excess emissions to EPA (Attn: A-3-3) for every calendar quarter. The report shall include the following:
 - a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factors used, and the date and time of commencement and completion of each time period of excess emissions. (PSD)
 - b. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns and malfunctions of the cogeneration gas turbine system. The nature and cause of any malfunction (if known) and the corrective action taken or preventive measures adopted shall also be reported. (PSD)
 - c. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments. (PSD)
 - d. When no excess emission have occurred or the continuous monitoring system has not been inoperative, repaired, or adjusted, such information shall be stated in the report. (PSD)
 - e. Excess emissions shall be defined as any three-hour period during which the average emissions of NOX, as measured by the continuous monitoring system, exceeds the NOX maximum emission limits set forth in Conditions IX. C. (PSD)
4. Excess emission indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit. (PSD)

F. (Deleted under BAAQMD Title V application # 6748)

G. New Source Performance Standards

The proposed facility is subject to the Federal regulations entitled Standards of Performance for New Stationary Sources (40 CFR 60). The owner or operator shall meet all applicable requirements of Subparts A and GG of this regulation. (PSD)

RECOMMENDATION

Issue an Authority to Construct to install a dry low NOx combustor (GE DLN1+ or Power Systems Manufacturing's LEC III) a Change of Permit Condition for Conditions No. 2780 and 21961. The following source is subject to Conditions No. 2780, 14299, and 21961:

S-100 GE Frame 7 Gas Turbine Generator, Rated @ 87MW
Turbine, Cogeneration, 1085MM BTU/hr max,
Natural gas, 7 days/wk

EXEMPTIONS

None.

By: _____ Date: _____
Brian Lusher
Senior Air Quality Engineer