San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

OCT 12 2010

Thomas Tinucci
Wellhead Power Delano, LLC
650 Bercut Drive, Suite C
Sacramento, CA 95811

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: S-1103269

Dear Mr. Tinucci:

Enclosed for your review and comment is the District's analysis of Wellhead Power Delano, LLC's application for an Authority to Construct for a 47.6 MW peaking power plant at Section 32, Township 24S, Range 25E MDB&M.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Michael Buss of Permit Services at (661) 392-5606.

Sincerely,

for David Warner
Director of Permit Services

DW:mrb

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
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www.valleyair.org www.healthyairliving.com

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

OCT 12 2010

Mike Tollstrup, Chief
Project Assessment Branch
Stationary Source Division
California Air Resources Board
PO Box 2815
Sacramento, CA 95812-2815

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: S-1103269

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Wellhead Power Delano, LLC's application for an Authority to Construct for a 47.6 MW peaking power plant at Section 32, Township 24S, Range 25E MDB&M.

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Bakersfield Californian
Bakersfield Californian

**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AN AUTHORITY TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct to Wellhead Power Delano, LLC for a 47.6 MW peaking power plant at Section 32, Township 24S, Range 25E MDB&M.

The analysis of the regulatory basis for this proposed action, Project #S-1103269, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, REGION'S ADDRESS.**

San Joaquin Valley Air Pollution Control District
Authority to Construct
Application Review
Peaking Power Plant Powered By a Gas Turbine

Facility Name:	Wellhead Power Delano, LLC	Date:	Oct 4, 2010
Mailing Address:	650 Bercut Drive, Suite C	Engineer:	Michael Buss
	Sacramento, CA 95814	Lead Engineer:	Allan ~~Phillips~~ 10/6/10
Contact Person:	Thomas Tinucci, Engineering Manager		
Telephone:	(916) 447-5171		
Other Contact:	Scott Weaver, consultant - SAIC		
	(626) 440-8347		
Application #(s):	S-6662-2-0		
Project #:	S-1103269		
Deemed Complete:	August 16, 2010		
Priliminary Decision			
Final Decision			

I. Proposal

Wellhead Power Delano, LLC (WHP) has requested an Authority to Construct permit for the installation of a nominal 47.6 MW peaking power plant powered by a General Electric (GE) LM-6000 Gas Turbine. The LM-6000 will be installed in a simple-cycle configuration and equipped with water injection technology, a Selective Catalytic Reduction (SCR) System, an Oxidation Catalyst and an inlet air chiller system or fogger system. The proposed operation also includes one (1) permit exempt cooling tower.

WPD received an Authority to Construct (ATC) # S-6662-1-0 from the SJVAPCD on 1/23/2007. Under SJVAPCD Rule 2050, ATCs expire two (2) years from the date of issuance except under certain circumstances where a single two year extension can be granted by the Air Pollution Control Officer (APCO). In 2008, WPD petitioned the SJVAPCD for such extension based on Rule 2050 Section 4.4 (Economic Downturn). That extension was granted such that the current ATC will expire on 1/23/2011.

WPD states that they are not ready to commence construction before the expiration of ATC S-6662-1-0. Therefore WPD is requesting a new ATC for the operation. Once the new ATC is issued, it will cancel and replace ATC S-6662-1-0.

This new application is the same in all respects except they are asking for the option to install an inlet air fogger system (or previously approved inlet air chiller system). Pursuant to SJVAPCD Rule 2201, Section 5.8, the District is required to conduct a Determination of Compliance (DOC) review for any power plant that will be licensed by the California Energy Commission (CEC). The Determination of Compliance (DOC) review is functionally equivalent to an Authority to Construct (ATC) review. The WPD

Peaker Project is not subject to approval by the California Energy Commission (CEC); Small Power Plants, less than 50 MW, are exempt from this requirement. Therefore, a normal Authority to Construct (ATC) application review will occur.

Tulare County was the lead agency for this project for the requirements of the California Environmental Quality Act (CEQA). As of November 20, 2006, the CEQA process was finalized, therefore; the District will proceed with the issuance of the ATC for WPD.

The project proposal includes provisions for commissioning activities (identical to the commissioning conditions on previously approved ATC S-6662-1-0) for testing, tuning, and calibration activities recommended by the equipment Manufacturers and construction contractor to insure safe and reliable steady state operation of the turbine and associated electrical delivery systems. The total number of firing hours without abatement of emissions by the SCR system and the oxidation catalyst will be limited to no more than 100 hours during the commissioning period.

Applicant is proposing the use of either an inlet air chiller system or fogger system. Gas turbine inlet air cooling is used to increase gas turbine output (the cooled air is denser, giving the machine a higher air mass flow rate and pressure ratio, resulting in an increase in output). The maximum heat input rating of the gas turbine is determined by the inlet air cooling option installed.

The inlet air chiller system results in a maximum heat input rating of 472 MMBtu/hr or the inlet air fogger system results in a maximum heat input rating of 438 MMBtu/hr. This is according to documentation provided by the manufacturer (see Appendix B). A comprehensive comparison of the two inlet air cooling options is included in Section V[1]:

The applicant has proposed to keep total annual NOx emissions below 20,000 lb/year; therefore offsets are not triggered for the project under District New Source Review (NSR) Rule.

The facility does not have a Title V permit; therefore the requirements of Rule 2520 do not apply to this project approval.

II. Applicable Rules

Rule 1080 Stack Monitoring (12/17/92)
Rule 1081 Source Sampling (12/16/93)
Rule 1100 Equipment Breakdown (12/17/92)
Rule 2010 Permits Required (12/17/92)
Rule 2020 Exemptions (12/20/07)
Rule 2201 New and Modified Stationary Source Review Rule (12/18/08)
Rule 2520 Federally Mandated Operating Permits (6/21/01)

[1] A comprehensive explanation of the inlet air cooling options is included in GE Power Systems publication GER-4200, *"Economic and Technical Considerations for Combined-Cycle Performance-Enhanced Options"*, Chuck Jones, GE Power Systems, Schenectady, NY (10/00).

Rule 2540	Acid Rain Program (11/13/97)
Rule 2550	Federally Mandated Preconstruction Review-Major Sources of Air Toxics (6/18/98)
Rule 4001	New Source Performance Standards (4/14/99) Subpart GG – Standards of Performance of Stationary Gas Turbines
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4703	Stationary Gas Turbines (9/20/07)
Rule 4801	Sulfur Compounds (12/17/92)
Rule 8011	General Requirements (8/19/04)
Rule 8021	Construction, Demolition, Excavation, Extraction and Other Earthmoving Activities (8/19/04)
Rule 8031	Bulk Materials (8/19/04)
Rule 8041	Carryout and Trackout (8/19/04)
Rule 8051	Open Areas (8/19/04)
Rule 8061	Paved and Unpaved Roads (8/19/04)
Rule 8071	Unpaved Vehicle/Equipment Traffic Areas (9/16/04)

California Environmental Quality Act (CEQA)

CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice
CH&SC 44300	Air Toxic "Hot Spots

III. Project Location

Equipment will be located North of County Line Road, East of Casey Avenue Extension within Section 32, Township 24S, Range 25E Delano, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

The proposed facility will consist of one natural gas-fired General Electric (GE) Model LM6000 PC Sprint combustion turbine generator (CTG), equipped with an inlet air chiller system or inlet air fogger system, a selective catalytic reduction (SCR) system with ammonia injection, an oxidation catalyst, and associated support equipment. The CTG system will consist of a stationary, aero derivative CTG, designed to use natural gas to produce electricity at a nominal output of 47.6 MW. No heat recovery steam generators (HRSGs) will be installed and the applicant has not proposed any black start equipment. The facility has proposed a mechanical draft cooling tower with less than 10,000 gallon/minute recirculation rate; however, pursuant to District Rule 2020, Section 6.2 the cooling tower is permit exempt. The facility will operate as a peaking unit.

Inlet air cooling options

Applicant is proposing the use of either an inlet air chiller system or fogger system. Gas turbine inlet air cooling is used to increase gas turbine output (the cooled air is denser, giving the machine a higher air mass flow rate and pressure ratio, resulting in an increase in output).

Inlet air chiller system

In a chilling system, heat is removed from the inlet airflow by means of heat exchangers (chilling coils). Cooling is achieved through both sensible cooling (no condensation of water) and latent cooling (condensation of water), where the former is more energy efficient but the air is only cooled down to the dew point. The chilling coils are normally placed downstream of the filter cartridges in the clean-air path inside the filter house itself. A mist eliminator is provided downstream of the coils to prevent condensed water droplets from entering the inlet duct. The inlet air chiller system can cool the air regardless of ambient humidity. However, one of the disadvantages is that it needs a source of chilled water.

Inlet air fogger system

Inlet air cooling fogging systems create a large evaporative surface area by atomizing the supply of water into billions of super-small spherical droplets. Droplet diameter is important with respect to the surface area of water exposed to the airstream and, therefore to evaporation. It is important to make a true fog, not a mist. The water flow automatically varies according to weather conditions, so that for any combination of air temperature and humidity, the injected water is exactly the amount necessary for saturating the air flow. Inlet air fogging is sensitive to ambient relative humidity. However, inlet air fogging has a higher heat rate improvement than the inlet air chiller system.

V. Equipment Listing

S-6662-2-0:

47.6 MW nominally rated Simple-Cycle Peak-Demand Power Generating System consisting of a General Electric Model LM6000 PC Sprint natural gas-fired combustion turbine engine with inlet air chiller or air fogger system, selective catalytic reduction (SCR) system with ammonia injection and a catalytic oxidation reactor (COR).

Permit Exempt Cooling Towers:

Pursuant to District Rule 2020, Section 6.2, water cooling towers that have a circulation rate of less than 10,000 gallons per minute and that are not used for cooling of process

water, water from barometric jets or water from barometric condensers are not required to obtain an Authority to Construct or a Permit to Operate.

The proposed turbine will be equipped with a chiller or fogger system, which is used to lower the temperature of the air entering the combustion chamber in order to increase the efficiency of system. The cooling tower will be used to remove heat from the cooling water. The cooling tower will consist of 2 cells and have a design water flow rate of 7,500 gallons per minute (gym).

The proposed cooling tower does not cool process water, water from a barometric jet or water from a barometric condenser. The maximum water flow rate will be 7,500 gallons per minute. Therefore, the cooling towers meet the requirements listed above and are not required to obtain an Authority to Construct or Permit to Operate.

VI. Emission Control Technology Evaluation

Emissions from natural gas-fired turbines include NO_X, SO_X, PM_{10}, CO, and VOC.

NOx:

NO_X is the major pollutant of concern when combusting natural gas. Virtually all gas turbine NO_X emissions originate as NO. This NO is further oxidized in the exhaust system or later in the atmosphere to form the more stable NO_2 molecule. There are two mechanisms by which NO_X is formed in turbine combustors: 1) the oxidation of atmospheric nitrogen found in the combustion air (thermal NO_X and prompt NO_X), and 2) the conversion of nitrogen chemically bound in the fuel (fuel NO_X).

Thermal NO_X is formed by a series of chemical reactions in which oxygen and nitrogen present in the combustion air dissociate and subsequently react to form oxides of nitrogen. Prompt NO_X, a form of thermal NO_X, is formed in the proximity of the flame front as intermediate combustion products such as HCN, H, and NH are oxidized to form NO_X.

Fuel NO_X is formed when fuels containing nitrogen are burned. Molecular nitrogen, present as N_2 in some natural gas, does not contribute significantly to fuel NO_X formation. With excess air, the degree of fuel NO_X formation is primarily a function of the nitrogen content in the fuel. When compared to thermal NO_X, fuel NO_X is not currently a major contributor to overall NO_X emissions from stationary gas turbines firing natural gas.

The level of NO_X formation in a gas turbine, and hence the NO_X emissions, is unique (by design factors) to each gas turbine model and operating mode. The primary factors that determine the amount of NO_X generated are the combustor design, the types of fuel being burned, ambient conditions, operating cycles, and the power output of the turbine.

Selective Catalytic Reduction systems selectively reduce NO_X emissions by injecting ammonia (NH_3) into the exhaust gas stream upstream of a catalyst. Nitrogen oxides, NH_3,

and O_2 react on the surface of the catalyst to form molecular nitrogen (N_2) and H_2O. SCR is capable of over 90 percent NO_X reduction. Titanium oxide is the SCR catalyst material most commonly used, though vanadium pentoxide, noble metals, or zeolites are also used. The ideal operating temperature for a conventional SCR catalyst is 600 to 750 °F. Exhaust gas temperatures greater than the upper limit (750 °F) will cause NO_X and NH_3 to pass through the catalyst unreacted.

The new turbine will be equipped with water injection and selective catalytic reduction (SCR) to control nitrogen oxide (NO_X) emissions.

CO, PM_{10}, SO_X and VOC:

Emissions of particulate matter less than ten microns (PM_{10}) will be controlled by the use of PUC-quality natural gas, an air intake filter house, and routing of lube oil vent gases into the exhaust stream. Emissions of volatile organic compounds (VOCs), carbon monoxide (CO), and sulfur oxide compounds (SO_X) will also be controlled through the use of an oxidation catalyst and PUC-quality natural gas. The oxidation catalyst promotes the oxidation of CO and hydrocarbon compounds to carbon dioxide (CO2) and water (H2O) as the flue gas passes through the catalyst bed. The oxidation process takes place spontaneously, without the requirement for introducing reactants.

WPD is proposing to control NOx emissions to 2.5 ppmv (at 15% O2), with ammonia slip limited to 10 ppmv (at 15% O2). CO emissions will be controlled to 10 ppmv (at 15% O2) and VOC emissions will be controlled to 2 ppmv (at 15% O2). These proposed emissions levels meet BACT requirement 3.4.8, which is applicable to this gas turbine engine (Gas Turbine < 50 MW, Uniform load, without heat recovery, Appendix D). A top-down BACT analysis for the project is included in Appendix E.

VII. General Calculations

A. Assumptions

- For the purposes of NSR calculations, the commissioning period emissions will not be included.
- Maximum daily emissions for the CTG for NO_X, SO_X, PM_{10}, CO, and VOC during the commissioning period are estimated assuming 24 hours of operation at full speed and no load.
- The commissioning period will not exceed 100 hours and the emissions emitted during the commissioning period will accrue towards the maximum annual emissions limit.

- BACT emission concentration limits of 2.5 ppmvd NOx @ 15% O_2 and 2.0 ppmv VOC @ 15% O2 are proposed for the turbine at all operating loads (except during startup and shutdown).

- BACT for CO is not triggered, CO emissions of 10 ppmv @ 15% O2 are proposed by the applicant (except during startup and shutdown periods).

- Per the applicant, the Gas Turbine Engine (GTE) will be fired only on PUC regulated natural gas.

- Natural gas F factor is 8,710 dscf/MMBtu. (@ 68 F per EPA 40 CFR 60 Appendix B method 19)

- Higher Heating Value of natural gas is 1,000 Btu/scf.

- The maximum heat input rating for the turbine is

    - 472 MMBtu/hr if inlet air *chiller* system is installed, or
    - 438 MMBtu/hr if the inlet air *fogger* system is installed (applicant – see Appendix B)

- All particulate matter is PM_{10}. (Ref. CARB PM Inventory Weight Fractions, 02/13/86)

- SO_X emissions are based on PUC quality natural gas fuel.

- Daily emissions are based on 24 hours per day (20 hours nominal + 2 hour startup + 2 hour shutdown) operation (Applicant proposed)

- Startup and shutdowns not to exceed 2 hours per day (2 hr startup and 2 hr shutdown), nor 230 hrs per yr (230 hr startup and 230 hr per year shutdown)

- NH_3 = 10 ppmv, proposed

- Annual NOx emissions proposed by applicant not to exceed 19,999 lb-NOx/year.
  Baseline NOx emissions = 19,999 lb-NOx/year – (startup + shutdown emissions)
  Baseline NOx = 19,999 – (230 hr/yr x 20 lb/hr + 230 hr/yr x 7 lb/hr)
  = 13,789 lb-NOx/yr

  Corresponding baseline fuel use = [(13,789 lb-NOx/yr) / (0.0092* lb/MMBtu)]

  = 1,498,804 MMBtu/yr

  * Equivalent to 2.5 ppmv NOx @ 15% O_2.

B. Emission Factors

The maximum air contaminant mass emission rates (lb/hr) during the commissioning period estimated by the facility (see Attachment I) for the proposed CTG is summarized below:

Commissioning Period Emissions					
	NO_X*	SO_X	PM_{10}	CO	VOC
Mass Emission Rate (lb/hr)	95.82	24.2	55.1	194.6	21.2

*Proposed by the applicant based on data in attachment I.

For the new turbine, the emissions factors for NO_X, CO, and VOC are provided by the applicant and are calculated at 15% O_2. The PM_{10} emission factor is taken from AP-42 Table 3.1-2a (4/00) and the SO_X emission factor is derived from District Policy APR 1720, SO_X Emissions Factors for Combustion of PUC-quality Natural Gas.

Emissions Factors for Gas Turbine Startup		
	Emission Factor	Source
NO_X	20 lb/hr	Typical for LM-6000 (same as previously approved)
SO_X	0.00285 lb/MMBtu	APR 1720
PM_{10}	0.0066 lb/MMBtu	AP-42 Table 3.1-2a (4/00)
CO	15 lb/hr	Typical for LM-6000
VOC	2 ppmv @ 15 O_2	Same as baseload emission rate

Emissions Factors for Gas Turbine Shutdown		
	Emission Factor	Source
NO_X	7.0 lb/hr	Typical for LM-6000 (same as previously approved)
SO_X	0.00285 lb/MMBtu	APR 1720
PM_{10}	0.0066 lb/MMBtu	AP-42 Table 3.1-2a (4/00)
CO	12 lb/hr	Typical for LM-6000
VOC	2 ppmv @ 15 O_2	Same as baseload emission rate
Emissions Factors for Gas Turbine Baseload (100% load)		
	Emission Factor	Source
NO_X	2.5 ppmvd@15% O_2 (0.0092 lb-NOx/MMBtu)	BACT
SO_X	0.00285 lb/MMBtu	APR 1720 and BACT
PM_{10}	0.0066 lb/MMBtu	AP-42 Table 3.1-2a (4/00)
CO	10 ppmvd @ 15% O_2	Applicant
VOC	2 ppmvd @ 15% O_2	BACT
NH_3	10 ppmv @ 15% O_2	Applicant

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Section 3.26 of Rule 2201 defines Potential to Emit (PE) as the maximum capacity of an emissions unit to emit a pollutant under its physical and operational design. The criteria pollutant potentials to emit for the emission unit are presented below:

Since this is a brand new facility, the Pre-Project Potential to Emit (PE1) for all the emissions units associated with this project is equal to zero.

2. Post Project Potential to Emit (PE2)

PE2 for the gas turbine is based on the emission factors listed above is section II.B. The daily emissions are based on 24 hr operation per day (20 hr nominal operation + 2 hr startup + 2 hr shutdown). Emissions depend on whether the inlet air chiller or fogger system is installed (different maximum heat input ratings).

Emissions using inlet chiller system:

Post project emissions with inlet chiller option are summarized below:

Post-project Potential to Emit (PE2) with chiller					
	Hourly Emissions (lb/hour)			Daily Emissions (lb/day) (2 hr SU + 2 hr SD + 20 hr baseline)	Annual Emissions (lb/year)
	Startup	Shutdown	Steady state		
NO_X	20.0	7.0	4.35	141.0	19,999
SO_X	1.35	1.35	1.35	32.4	4,891
PM_{10}	3.12	3.12	3.12	74.9	11,325
CO	15.0	12.0	10.58	265.6	39,783
VOC	1.21	1.21	1.21	29.0	4,462
NH_3	6.42	6.42	6.42	154.1	23,337

NOx emissions:

Hourly NOx =

$$=\frac{2.5}{10E6}\times\left(\frac{20.9}{20.9-15}\right)\times\frac{8710dscf}{MMBtu}\times\frac{46lb\,NOx}{lb\,mole}\times\frac{mole}{379.5scf}\times\left(\frac{459.67+60F}{459.67+68F}\right)\times\frac{472MMBtu}{hr}$$

= 4.3461 lb NO_X/hr → 4.35 lb-NOx/hr (= 0.0092 lb-NOx/MMBtu)

Daily NOx (using chiller option) =

$$=\left(\frac{4.35\,lb\,NOx}{hr}\times\frac{20\,hrs}{day}\right)+\left(\frac{20\,lb\,NOx}{hr}\times 2hr\,\frac{startup}{day}\right)+\left(\frac{7\,lb\,NOx}{hr}\times 2\,hr\,\frac{shutdown}{day}\right)$$

= 141.0 lb NO_X/day

Annual NOx =
= baseline emissions + startup + shutdown
= 13,789 + (20 lb/hr x 230 hr/yr) + (7 lb/hr x 230 hr/yr) = 13,789 + 4,600 + 1,610
= 19,999 lb-NOx/year

SOx (chiller option):

Hourly = 472 MMBtu/hr x 0.00285 lb/MMBtu = 1.35 lb-SOx/hour

Daily = 1.35 lb/hr x 24 hr/day = 32.4 lb-SOx/day

Annual SOx = baseline emissions + startup and shutdown
= (1,498,804 MMBtu/yr x 0.00285 lb/MMBtu) + (460 hr x 472 MMBtu/hr) x (0.00285 lb-SOx/MMBtu)
= 4,891 lb/year

PM_{10} (chiller option)

Hourly = 472 MMBtu/hr x 0.0066 lb/MMBtu = 3.12 lb-PM_{10}/hr

Daily = 3.12 lb PM_{10}/hr x 24 hr/day = 74.9 lb-PM_{10}/day

Annual PM_{10} = baseline emissions + startup and shutdown
= (1,498,804 MMBtu/yr x 0.0066 lb-PM_{10}/MMBtu) + (460 hr x 472 MMBtu/hr) x (0.0066 lb-PM_{10}/MMBtu)
= 11,325 lb-PM_{10}/year

CO (chiller option):

Hourly = 10 ppmv CO at 15% O2 =

$$=\frac{10.0}{10E6}\times\left(\frac{20.9}{20.9-15}\right)\times\frac{8710dscf}{MMBtu}\times\frac{28lbCO}{lb\,mole}\times\frac{mole}{379.5scf}\times\left(\frac{459.67+60F}{459.67+68F}\right)\times\frac{472MMBtu}{hr}$$

= 10.58 lb-CO/hour

Daily CO =

$$=\left(\frac{10.58\,lb\,CO}{hr}\times\frac{20\,hrs}{day}\right)+\left(\frac{15\,lb\,CO}{hr}\times 2hr\,\frac{startup}{day}\right)+\left(\frac{12\,lb\,CO}{hr}\times 2\,hr\,\frac{shutdown}{day}\right)$$

= 265.6 lb-CO/day

Daily CO (chiller option) =

$$= \left(\frac{10.58\,lb\,CO}{hr} \times \frac{20\,hrs}{day}\right) + \left(\frac{15\,lb\,CO}{hr} \times 2hr\,\frac{startup}{day}\right) + \left(\frac{12\,lb\,CO}{hr} \times 2\,hr\,\frac{shutdown}{day}\right)$$

= 265.6 lb-CO/day

Annual CO = baseline emissions + startup and shutdown
= (0.0224 lb/MMBtu*1,498,804 MMBtu/yr)+(15 lb/hr*230 hr/yr)+(12 lb/hr*230 hr/yr)
= 33,573 + 3,450 + 2,760
= 39,783 lb-CO/year

VOC (chiller option):

Hourly = 2 ppmv at 15% O2

$$= \frac{2.0}{10E6} \times \left(\frac{20.9}{20.9-15}\right) \times \frac{8710dscf}{MMBtu} \times \frac{16lbVOC}{lb\,mole} \times \frac{mole}{379.5scf} \times \left(\frac{459.67+60F}{459.67+68F}\right) \times \frac{472MMBtu}{hr}$$

= 1.21 lb-VOC/hour = 0.0026 lb/MMBtu (1.21 lb/hr divided by 472 MMBtu/hr)

Daily =

$$= \left(\frac{1.21lb-VOC}{hr} \times \frac{20hrs}{day}\right) + \left(\frac{1.21lb-VOC}{hr} \times 2hr\,\frac{startup}{day}\right) + \left(\frac{1.21lb-VOC}{hr} \times 2hr\,\frac{shutdown}{day}\right)$$

= 29.0 lb-VOC/day

Annual VOC = baseline emissions + startup and shutdown
= (1,498,804 MMBtu/yr*0.0026 lb/MMBtu) + (460 hr*472 MMBtu/hr) x (0.0026 lb/MMBtu)
= 3,897 + (217,120 x 0.0026) = 3,897 + 565
= 4,462 lb-VOC/year

NH_3 (chiller option):

Hourly =

$$= \frac{10.0}{10E6} \times \left(\frac{20.9}{20.9-15}\right) \times \frac{8710dscf}{MMBtu} \times \frac{17lb\,NH3}{lb\,mole} \times \frac{mole}{379.5scf} \times \left(\frac{459.67+60F}{459.67+68F}\right) \times \frac{472MMBtu}{hr}$$

= 6.42 lb-NH_3/hr, 0.0136 lb/MMBtu (6.42 lb/hr / 472 MMBtu/hr)

Daily NH_3 = 6.42 lb-NH_3/hr x 24 hr/day = 154.1 lb-NH_3/day

Annual NH_3 = (baseline emissions + start and shutdown emissions)

= [(1,498,804 MMBtu/yr) + (460 hr/yr x 472 MMBtu/hr)] x 0.0136 lb/MMBtu
= 23,337 lb-NH_3/year

Emissions using inlet fogger system:

Post-project Potential to Emit (PE2) with fogger					
	Hourly Emissions (lb/hour)			Daily Emissions (lb/day) (2 hr SU + 2 hr SD + 20 hr baseline)	Annual Emissions (lb/year)
	Startup	Shutdown	Steady state		
NO_X	20.0	7.0	4.03	134.6	19,999
SO_X	1.25	1.25	1.25	30.0	4,846
PM_{10}	2.89	2.89	2.89	69.4	11,222
CO	15.0	12.0	9.82	250.4	39,783
VOC	1.12	1.12	1.12	26.9	4,421
NH_3	5.96	5.96	5.96	143.0	23,124

NOx emissions:

Hourly NOx =

$$= \frac{2.5}{10E6} \times \left(\frac{20.9}{20.9-15}\right) \times \frac{8710\,dscf}{MMBtu} \times \frac{46\,lb\,NOx}{lb\,mole} \times \frac{mole}{379.5\,scf} \times \left(\frac{459.67+60\,F}{459.67+68\,F}\right) \times \frac{438\,MMBtu}{hr}$$

= 4.0331 lb NO_X/hr → 4.03 lb/hr (0.0092 lb-NOx/MMBtu)

Daily NOx =

$$= \left(\frac{4.03\,lb\,NOx}{hr} \times \frac{20\,hrs}{day}\right) + \left(\frac{20\,lb\,NOx}{hr} \times 2hr\,\frac{startup}{day}\right) + \left(\frac{7\,lb\,NOx}{hr} \times 2\,hr\,\frac{shutdown}{day}\right)$$

= 134.6 lb-NO_X/day

Annual NOx =

= baseline emissions + startup + shutdown

= 13,789 + (20 lb/hr x 230 hr/yr) + (7 lb/hr x 230 hr/yr) = 13,789 + 4,600 + 1,610

= 19,999 lb-NOx/year

Emissions using inlet fogger system (continued):

SOx:

Hourly = 438 MMBtu/hr x 0.00285 lb/MMBtu = 1.25 lb-SOx/hour

Daily = 1.25 lb/hr x 24 hr/day = 30.0 lb-SOx/day

Annual SOx = baseline emissions + startup and shutdown
= (1,498,804 MMBtu/yr x 0.00285 lb/MMBtu) + (460 hr x 438 MMBtu/hr) x (0.00285 lb-SOx/MMBtu)
= 4,846 lb/year

PM_{10}

Hourly = 438 MMBtu/hr x 0.0066 lb/MMBtu = 2.89 lb-PM_{10}/hr

Daily = 2.89 lb PM_{10}/hr x 24 hr/day = 69.4 lb-PM_{10}/day

Annual PM_{10} = baseline emissions + startup and shutdown
= (1,498,804 MMBtu/yr x 0.0066 lb-PM_{10}/MMBtu) + (460 hr x 438 MMBtu/hr) x (0.0066 lb-PM_{10}/MMBtu)
= 11,222 lb-PM_{10}/year

CO:

Hourly = 10 ppmv CO at 15% O2 =

$$= \frac{10.0}{10E6} \times \left(\frac{20.9}{20.9-15}\right) \times \frac{8710 dscf}{MMBtu} \times \frac{28 lb CO}{lb\,mole} \times \frac{mole}{379.5 scf} \times \left(\frac{459.67+60F}{459.67+68F}\right) \times \frac{438 MMBtu}{hr}$$

= 9.82 lb-CO/hour

Daily =

$$= \left(\frac{9.82\,lb\,CO}{hr} \times \frac{20\,hrs}{day}\right) + \left(\frac{15\,lb\,CO}{hr} \times 2hr\,\frac{startup}{day}\right) + \left(\frac{12\,lb\,CO}{hr} \times 2\,hr\,\frac{shutdown}{day}\right)$$

= 250.4 lb-CO/day

Annual CO = baseline emissions + startup and shutdown

= (0.0224 lb/MMBtu*1,498,804 MMBtu/yr)+(15 lb/hr*230 hr/yr)+(12 lb/hr*230 hr/yr)
= 33,573 + 3,450 + 2,760

= 39,783 lb-CO/year

Emissions using inlet fogger system (continued):

VOC:

Hourly = 2 ppmv at 15% O2

$$=\frac{2.0}{10E6}\times\left(\frac{20.9}{20.9-15}\right)\times\frac{8710dscf}{MMBtu}\times\frac{16lbVOC}{lb\,mole}\times\frac{mole}{379.5scf}\times\left(\frac{459.67+60F}{459.67+68F}\right)\times\frac{438MMBtu}{hr}$$

= 1.12 lb-VOC/hour = 0.0026 lb/MMBtu (1.12/438)

Daily VOC

$$=\left(\frac{1.12lb-VOC}{hr}\times\frac{20hrs}{day}\right)+\left(\frac{1.12lb-VOC}{hr}\times 2hr\,\frac{startup}{day}\right)+\left(\frac{1.12lb-VOC}{hr}\times 2hr\,\frac{shutdown}{day}\right)$$

= 26.9 lb/day

Annual VOC = baseline emissions + startup and shutdown

= (1,498,804 MMBtu/yr*0.0026 lb/MMBtu) + (460 hr*438 MMBtu/hr) x (0.0026 lb/MMBtu)
= 3,897 + (201,480 x 0.0026) = 3,897 + 524
= 4,421 lb-VOC/year

NH_3:

Hourly

$$=\frac{10.0}{10E6}\times\left(\frac{20.9}{20.9-15}\right)\times\frac{8710dscf}{MMBtu}\times\frac{17lb\,NH3}{lb\,mole}\times\frac{mole}{379.5scf}\times\left(\frac{459.67+60F}{459.67+68F}\right)\times\frac{438MMBtu}{hr}$$

= 5.96 lb-NH_3/hr, 0.0136 lb/MMBtu (5.96/438)

Daily NH_3

= 5.96 lb-NH_3/hr x 24 hr/day = 143.0 lb-NH_3/day

Annual NH_3 = (baseline emissions + start and shutdown emissions)

= [(1,498,804 MMBtu/yr) + (460 hr/year x 438 MMBtu/hr)] x 0.0136 lb/MMBtu
= 23,124 lb-NH_3/year

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

There is a valid ATC previously approving this power plant (which will be cancelled and replaced with the issuance of ATC S-6662-2-0. The emissions approved with that ATC are shown below.

Pre-project Stationary Source Potential to Emit [SSPE1] (lb/year)						
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC	NH_3
S-6662-1-0	19,902	5,253	11,955	41,872	4,608	23,282
Pre-Project SSPE1	19,902	5,253	11,955	41,872	4,608	23,282

4. Post Project Stationary Source Potential to Emit (SSPE2)

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Post Project Stationary Source Potential to Emit [SSPE2] (lb/year)						
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**	**NH_3**
S-6662-1-0 Cancelled/replaced w 2-0	0	0	0	0	0	0
S-6662-2-0						
Chiller option	**19,999**	**4,891**	**11,325**	**39,783**	**4,462**	**23,337**
Fogger option	19,999	4,846	11,222	39,783	4,421	23,124
Post Project SSPE2	**19,999**	**4,891**	**11,325**	**39,783**	**4,462**	**23,337**

5. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a major source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.24.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since 9/19/1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Major Source Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
Pre-Project SSPE (SSPE1)	19,902	5,253	11,955	41,872	4,608
Post Project SSPE (SSPE2)	19,999	4,891	11,325	39,783	4,462
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No

As seen in the table above, the facility is not an existing Major Source and also is not becoming a Major Source as a result of this project.

6. Baseline Emissions (BE)

The BE calculation (in lbs/year) is performed pollutant-by-pollutant for each unit within the project, to calculate the QNEC and if applicable, to determine the amount of offsets required.

Pursuant to Section 3.7 of District Rule 2201, BE = Pre-project Potential to Emit for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

Otherwise,

BE = Historic Actual Emissions (HAE), pursuant to Rule 2201 Section 3.22.

Since this is a new emissions unit, BE = PE1 = 0 for all pollutants.

7. SB 288 Major Modification

An SB 288 Major Modification is a Major Modification as defined in 40 CFR Part 51.165 in effect on 12-19-2002) as "*any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act.*"

The facility is not a major source for NO_x, SO_x, PM10, CO or VOC - as discussed in Section VII.C.5 above; therefore, the project does not constitute a SB 288 Major Modification for these air contaminants.

8. Federal Major Modification

A Federal Major Modification is defined as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

The facility is not a major source for NO_x, SO_x, PM10, CO or VOC - as discussed in Section VII.C.5 above; therefore, the project does not constitute a Federal Major Modification for these air contaminants.

9. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated for each pollutant, for each unit, as the difference between the quarterly PE2 and the quarterly PE1. The results were used to complete the District's PAS emissions profile screen and were calculated in Appendix C.

QNEC (lb/qtr) = PE2 (lb/qtr) – QBE (lb/qtr)

Quarterly QNEC			
S-6662-2-0	PE2 (lb/yr)	BE (lb/yr)	QNEC (lb/qtr)
NOx	19,999	0	5,000
SOx	4,891	0	1,223
PM10	11,325	0	2,831
CO	39,783	0	9,946
VOC	4,462	0	1,116

VIII.Compliance

Rule 1080 Stack Monitoring

This Rule grants the APCO the authority to request the installation and use of continuous emissions monitors (CEMs), and specifies performance standards for the equipment and administrative requirements for recordkeeping, reporting, and notification.

The CTG will be equipped with operational CEMs for NO_X, CO, and O_2. Provisions included in the operating permit are consistent with the requirements of this Rule. Compliance with the requirements of this Rule is anticipated.

Proposed Rule 1080 Conditions:

- The exhaust stack shall be equipped with a continuous emissions monitor (CEM) for NOx, CO, and O2. The CEMs shall meet the requirements of 40 CFR part 60, Appendices B and F (for CO), and 40 CFR part 75, Appendices A and B (for NOx and O2) and shall be capable of monitoring emissions during startups and shutdowns as

well as during normal operating conditions. [District Rules 1080, 2201, 4001, and 4703]

- {1833} The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080]

- {1834} Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080]

- {1836} Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080]

- {1837} Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]

- For the CO CEMs, the owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F, 5.11, at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080]

- For the NOx and O2 CEMs, the owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 75, Appendix A, at least once every two operating quarters, unless incentive criteria has been met which allows the RATA to be performed once every fourth operating quarter. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 75, Appendix A. [District Rule 1080]

- {18839} The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM

was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080]

Rule 1081 Source Sampling

This Rule requires adequate and safe facilities for use in sampling to determine compliance with emissions limits, and specifies methods and procedures for source testing and sample collection.

Conditions have been placed on the permit to insure compliance with this Rule.

Proposed Rule 1081 Conditions:

- {1835} The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O2 analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081]

- Source testing to measure startup NOx, CO and VOC mass emission rates shall be conducted prior to the end of the commissioning period and at least once every seven years thereafter. CEM relative accuracy audit (RAA) shall be determined during startup source testing in accordance with 40 CFR 60, Appendix F. [District Rule 1081]

- Source testing to measure the NOx, CO, VOC, and NH_3 emission rates (lb/hr and ppmvd @ 15% O2) and PM10 emission rate (lb/hr) shall be conducted within 60 days of completion of commissioning period and at least once every twelve months thereafter. [District Rules 1081 and 4703]

- Compliance demonstration (source testing) shall be District witnessed or authorized and samples shall be collected by a certified testing laboratory. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

- The following test methods shall be used: NOx - EPA Method 7E or 20, PM10 - EPA Method 5 (front half and back half), CO - EPA Method 10 or 10B, O2 - EPA Method 3, 3A, or 20, VOC - EPA Method 18 or 25, ammonia - BAAQMD ST-1B, and fuel gas sulfur content - ASTM D3246. NOx test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. The request to utilize EPA approved

alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rules 1081, 4001, and 4703]

Rule 1100 Equipment Breakdown

This Rule defines a breakdown condition and the procedures to follow if one occurs. The corrective action, the issuance of an emergency variance, and the reporting requirements are also specified.

The requirements of this Rule will be included in the operating permits. Compliance with this Rule is anticipated.

Proposed Rule 1100 Conditions:

- Permittee shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100, 6.1]

- The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the methods utilized to restore normal operations. [District Rule 1100, 7.0]

Rule 2010 Permits Required

This Rule requires any person building, altering, or replacing any operation, article, machine, equipment, or other contrivance, the use of which may cause the issuance of air contaminants, to first obtain authorization from the District in the form of an ATC. By the submission of an ATC application, the Wellhead Power Delano Peaker Project is complying with the requirements of this Rule.

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following*:

a. Any new emissions unit with a potential to emit > two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or

d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

As seen in Section VII.C.2.b of this evaluation, the applicant is proposing to install a new combustion turbine generator with PEs greater than 2 lb/day for NO_X, SO_X, PM_{10}, CO, and VOC. BACT is triggered for NO_X, SO_X, PM_{10}, and VOC criteria pollutants since the PEs are greater than 2 lbs/day. However, since the SSPE2 for CO is less than 200,000 lbs/year, as demonstrated in Section VII.C.5 of this document, BACT is not triggered for CO.

The PE of ammonia is greater than two pounds per day for the CTG. However, the ammonia emissions are intrinsic to the operation of the SCR system, which is BACT for NO_X. The emissions from a control device that is determined by the District to be BACT are not subject to BACT.

b. Relocation of emissions units – PE > 2 lb/day

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered for relocation of an emissions unit.

c. Modification of emissions units – AIPE > 2 lb/day

As discussed in Section I above, there are no modified emissions units associated with this project; therefore BACT is not triggered for AIPE > 2 lb/day.

d. SB 288 Major Modification or a Federal Major Modification

As discussed in Section VII.C.7 above, this project does not constitute an SB 288 Major Modification or a Federal Major Modification; therefore BACT is not triggered.

2. BACT Guideline

The District BACT Clearinghouse was created to assist applicants in selecting appropriate control technology for new and modified sources, and to assist the District staff in conducting the necessary BACT analysis. The Clearinghouse includes, for various class and category of sources, available control technologies and methods that meet one or more of the following conditions:

- Have been achieved in practice for such emissions unit and class of source; or

- Are contained in any SIP approved by the EPA for such emissions unit category and class of source; or
- Are any other emission limitations or control technique, including process and equipment changes of basic or control equipment, found to be technologically feasible for such class or category of sources or for a specific source.

Appendix D includes the BACT Guideline from the BACT Clearinghouse applicable to the new emissions unit associated with this project.

BACT Guideline 3.4.8 is applicable to the combustion turbine generator installation [Gas Turbine < 50 MW, Uniform Load, without Heat Recovery].

3. Top-Down Best Available Control Technology (BACT) Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

For Permit Unit S-6662-2-0, see Appendix E

4. BACT Summary:

BACT has been satisfied by the following:

NO_X: 2.5 ppmv @ 15% O_2 (3-hour rolling average, except during startup/shutdown) with water injection, SCR with ammonia injection and natural gas fuel.

SO_X: Natural gas with a sulfur content of 1.0 gr/100 scf

PM_{10}: Air inlet filter cooler, lube oil vent coalescer, and natural gas fuel with a sulfur content of 1.0 gr/100 scf

VOC: 2.0 ppmv @ 15% O_2 (3-hour rolling average, except during startup/shutdown).

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 or Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
Post Project SSPE (SSPE2)	19,999	4,891	11,325	39,783	4,462
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	No

2. Quantity of Offsets Required

As seen above, the SSPE2 is not > the offset thresholds for all the pollutants; therefore offset calculations are not necessary and offsets are not required.

C. Public Notification

1. Applicability

Public noticing is required for:
a. Any new Major Source, Federal Major Mod, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed,
d. New Stationary Source with SSPE exceeding the emissions offset threshold for one or more pollutants, and/or
e. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Source, Federal Major Mod or SB 288 Major Mod

As shown in Section VII.C.5 above, the SSPE2 is not greater than the Major Source threshold for any criteria pollutant. Therefore, public noticing is not required for this project for new Major Source purposes.

b. New emissions unit with PE > 100 lb/day

The PE2 for this new unit is compared to the daily PE Public Notice thresholds in the following table:

PE > 100 lb/day Public Notice Thresholds			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO_X	141.0	100 lb/day	**Yes**
SO_X	32.4	100 lb/day	No
PM_{10}	74.9	100 lb/day	No
CO	265.6	100 lb/day	Yes
VOC	29.0	100 lb/day	No

Therefore, public noticing for PE > 100 lb/day purposes is required.

c. Offset Threshold

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO_X	19,902	19,999	20,000 lb/year	No
SO_X	5,253	4,891	54,750 lb/year	No
PM_{10}	11,955	11,325	29,200 lb/year	No
CO	41,872	39,783	200,000 lb/year	No
VOC	4,608	4,462	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. New Stationary Source exceeding any offset threshold

The new operation does not exceed any offset threshold; therefore public noticing is not required for being a new source exceeding the offset thresholds.

e. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 – SSPE1. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds below:

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO_x	19,999	19,902	97	20,000 lb/year	No
SO_x	4,891	5,253	-362	20,000 lb/year	No
PM_{10}	11,325	11,955	-630	20,000 lb/year	No
CO	39,783	41,872	-2,089	20,000 lb/year	No
VOC	4,462	4,608	-146	20,000 lb/year	No

As demonstrated above, the SSIPE in not > 20,000 lb/year for any criteria air pollutant; therefore public noticing for SSIPE purposes is not required.

2. Public Notice Action

As discussed above, public noticing is required for this project for NO_X and CO emissions in excess of 100 lb/day. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

For the turbine, the DELs for NO_X, SO_X, PM_{10}, CO, VOC, and NH_3 will consist of lb/day and/or emission factors.

Proposed Rule 2201 (DEL) Conditions:

The CTG shall be fired exclusively on PUC regulated natural gas with a sulfur content of no greater than 1.0 grain of sulfur compounds (as S) per 100 dry scf of natural gas. [District Rule 2201]

During startup periods (as defined in Rule 4703), CTG exhaust emissions shall not exceed any of the following limits: NOx (as NO2) - 20.0 lb/hr, CO - 15 lb/hr, VOC - 1.21 lb/hr for the chiller system or 1.12 lb/hr for the fogger system, based on three hour averages. [District Rules 2201 and 4102]

During shutdown periods (as defined in Rule 4703), CTG exhaust emissions shall not exceed any of the following limits: NOx (as NO2) - 7.0 lb/hr, CO - 12 lb/hr, VOC - 1.21 lb/hr for the chiller system or 1.12 lb/hr for the fogger system, based on three hour averages. [District Rules 2201 and 4102]

Startup and shutdown times (as defined in Rule 4703) shall not exceed 2 hours each in any day. Startup/shutdown emissions shall be counted toward all applicable emission limits (lb/day and lb/year). [District Rules 2201 and 4703]

Emission rates from this unit, except during startup and shutdown, shall not exceed any of the following limits if the chiller system is installed: NOx (as NO2) - 4.3 lb/hr or 2.5 ppmvd @ 15% O2; SOx (as SO2) - 1.35 lb/hr; PM10 - 3.12 lb/hr;

CO - 10.58 lb/hr or 10.0 ppmvd @ 15% O2; or VOC (as methane) - 1.21 lb/hr or 2.0 ppmvd @ 15% O2. Emissions rates, except during startup and shutdown, shall not exceed any of the following if the fogger system is installed: NOx (as NO2) - 4.03 lb/hr or 2.5 ppmvd @ 15% O2; SOx (as SO2) - 1.25 lb/hr; PM10 - 2.89 lb/hr; CO - 9.82 lb/hr or 10.0 ppmvd @ 15% O2; or VOC (as methane) - 1.12 lb/hr or 2.0 ppmvd @ 15% O2. All emission concentration limits are based on three hour rolling averages. [District Rules 2201, 4001, and 4703]

Ammonia (NH3) emissions shall not exceed either of the following limits: If chiller system installed: 6.42 lb/hr or 10 ppmvd @ 15% O2 (based on a 24 hour rolling average). If fogger system installed: 5.96 lb/hr or 10 ppmvd @ 15% O2 (based on a 24 hour rolling average). [District Rules 2201 and 4102]

Each one hour period in a three hour rolling average will commence on the hour. The three hour average will be compiled from the three most recent one hour periods. Each one hour period in a twenty-four hour average will commence on the hour. The twenty-four hour average will be calculated starting and ending at twelve-midnight. [District Rule 2201]

Emissions from this unit, on days when a startup and/or shutdown occur, shall not exceed the following: If chiller option installed, NOx (as NO2) - 141.0 lb/day; SOx (as SO2) - 32.4 lb/day; PM10 - 74.9 lb/day; CO - 265.6 lb/day; or VOC - 29.0 lb/day. If fogger option installed, NOx (as NO2) - 134.6 lb/day; SOx (as SO2) - 30.0 lb/day; PM10 - 69.4 lb/day; CO - 250.4 lb/day; or VOC - 26.9 lb/day [District Rule 2201]

Daily emissions will be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each month in the twelve consecutive month rolling average emissions shall commence at the beginning of the first day of the month. The twelve consecutive month rolling average emissions to determine compliance with annual emissions limitations shall be compiled from the twelve most recent calendar months. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

District Rule 4703 requires NO_X and CO emission testing on an annual basis. The District Source Test Policy (APR 1705 10/09/97) requires annual testing for all pollutants controlled by catalysts. The control equipment will include a SCR system and an oxidation catalyst. Ammonia slip is an indicator of how well the SCR system is performing and PM_{10} emissions are a good indicator of how well the inlet air cooler/filter is performing.

Therefore, source testing for NO_X, CO, VOC, PM_{10}, and ammonia slip will be required within 120 days of initial operation and at least once every 12 months thereafter.
Also, initial source testing of NO_X, CO, and VOC startup emissions will be required for the gas turbine engine initially and not less than every seven years thereafter. This testing will serve two purposes: to validate the startup emission estimates used in the emission calculations and to verify that the CEMs accurately measure startup emissions.

The CTG will be equipped with an individual CEM. Each CEM will have two ranges to allow accurate measurements of NO_X and CO emissions during startup. The CEMs must meet the installation, performance, relative accuracy, and quality assurance requirements specified in 40 CFR 60.13 and Appendix B (referenced in the CEM requirements of Rule 4703) and acid rain requirements in 40 CFR Part 75.

40 CFR Part 60 subpart GG section (h) (2) requires fuel nitrogen content testing. The District will accept the NO_X source testing required by District Rule 4703 as equivalent to fuel nitrogen content testing.

40 CFR Part 60 subpart GG section (h) (1) requires that fuel sulfur content be monitored. Refer to the monitoring section of this document for a discussion of the fuel sulfur testing requirements.

2. Monitoring

District Rule 4703 requires monitoring of NOX emissions. The applicant has proposed CEMS for NO_X monitoring.

CO monitoring is not specifically required by any applicable Rule or Regulation. Nevertheless, due to erratic CO emission concentrations during startup and shutdown periods, it is necessary to limit the CO emissions on a pound per hour basis. Therefore, a CO CEMS is necessary to show compliance with the CO limits of this permit. The applicant has proposed a CO CEMS.

District Rule 4703 requires that the elapsed time of operation, on an annual basis be monitored. Such monitoring will be required.

40 CFR Part 60 Subpart GG requires monitoring of the fuel consumption. Fuel consumption monitoring will be required.

40 CFR Part 60 Subpart GG requires monitoring of the fuel nitrogen content. As stated in the Subpart GG compliance section of this document, the District will allow the annual NO_X source test to substitute for this requirement.

40 CFR Part 60 Subpart GG requires monitoring of the fuel sulfur content. The gas supplier, Pacific Gas & Electric (PG&E), may deliver gas with a sulfur content of up to 1.0 gr/scf. Since the sulfur content of the natural gas would not exceed

this value, it is District practice to require only annual fuel sulfur content testing if the SO_X emission factor is based on a fuel sulfur content of 1.0 gr/scf. The facility will be required to test fuel sulfur content annually show compliance.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset; public notification and daily emission limit requirements of Rule 2201. The following condition(s) will appear on the permit to operate:

- The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 2201 and 4703] N

- The permittee shall maintain the following records: hours of operation, fuel consumption (scf/hr, scf/rolling twelve month period and MMBtu/year), continuous emission monitor measurements, calculated ammonia slip, and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). [District Rules 2201 and 4703] N

4. Reporting

40 CFR Part 60 Subpart GG requires that the facility report the use of fuel with a sulfur content of more than 0.8% by weight. Reporting will be performed using an alternative custom reporting schedule. Refer to item G.2 (Monitoring Requirements) above for the alternative reporting schedule. Such reporting will be required.

40 CFR Part 60 Subpart GG requires the reporting of exceedences of the NO_X emission limit of the permit. Such reporting will be required.

40 CFR Part 60 Subpart GG requires the reporting of the times that the emission control equipment is deactivated due to ice fog. The ATC will not specifically address this issue. However, such reporting will be required and the facility will be required to record the reason for control equipment deactivation.

F. Ambient Air Quality Analysis

Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The Technical Services Division of the SJVAPCD conducted the required analysis. Refer to Appendix F of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_X, CO, and SO_X. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_X, CO, or SO_X.

The proposed location is in a non-attainment area for PM_{10}. The increase in the ambient PM_{10} concentration due to the proposed equipment is shown on the table titled Calculated Contribution. The levels of significance, from 40 CFR Part 51.165 (b) (2), are shown on the table titled Significance Levels.

Significance Levels					
Pollutant	Significance Levels ($\mu g/m^3$) - 40 CFR Part 51.165 (b)(2)				
	Annual Avg.	24 hr Avg.	8 hr Avg.	3 hr Avg.	1 hr Avg.
PM_{10}	1.0	5	N/A	N/A	N/A

Calculated Contribution					
Pollutant	Calculated Contributions ($\mu g/m^3$)				
	Annual Avg.	24 hr Avg.	8 hr Avg.	3 hr Avg.	1 hr Avg.
PM_{10}	0.02	0.12	N/A	N/A	N/A

As shown, the calculated contribution of PM_{10} will not exceed the EPA significance level. This project is not expected to cause or make worse a violation of an air quality standard.

G. Compliance Certification

Section 4.14.3 of this Rule requires the owner of a new Major Source or a source undergoing a Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Sections VIII, this facility is not a new major source and this project does constitute a Major modification, therefore this requirement is not applicable.

Rule 2520 Federally Mandated Operating Permits

This facility will be subject to Rule 2520 (Title V) because it will meet the following criteria specified in section 2.0:

- Section 2.5 states "A source with an acid rain unit for which application for an acid rain permit is required pursuant to Title IV (Acid Rain Program) of the CAA." The turbines are subject to the acid rain program.

The following condition has been placed on the ATC to ensure compliance.

- *Permittee shall submit an application to comply with Rule 2520 - Federally Mandated Operating Permits within twelve months of commencing operation. [District Rule 2520]*

Pursuant to Rule 2520 section 5.3.1 WPD must submit a Title V application within 12 months of commencing operations. No action is required at this time.

Rule 2540 Acid Rain Program

The proposed CTG is subject to the acid rain program a phase II unit, i.e. it will be installed after 11/15/90 and has a generator nameplate rating greater than 25 MW.

The acid rain program will be implemented through a Title V operating permit. Federal regulations require submission of an acid rain permit application at least 24 months before the date the unit expects to generate electricity.

The acid rain program requirements for this facility are relatively minimal. Monitoring of the NO_X and SO_X emissions and a relatively small quantity of SO_X allowances (from a national SO_X allowance bank) will be required as well as the use of a NO_X CEM.

The applicant has submitted their Acid Rain Program application as required by Rule 2540 (see Appendix H). Compliance with Rule 2540 is expected.

Rule 2550 Federally Mandated Preconstruction Review for Major Sources of Air Toxics

Section 2.0 states, "*The provisions of this rule shall only apply to applications to construct or reconstruct a major air toxics source with Authority to Construct issued on or after June 28, 1998.*" The applicant has provided the following analysis for Noncriteria pollutants/HAPs.

Noncriteria pollutants are compounds that have been identified as pollutants that pose a significant health hazard. Nine of these pollutants are regulated under the Federal New Source Review program: lead, asbestos, beryllium, mercury, fluorides, sulfuric acid mist, hydrogen sulfide, total reduced sulfur, and reduced sulfur compounds.[2]

In addition to these nine compounds, the federal Clean Air Act lists 189 substances as potential hazardous air pollutants (Clean Air Act Sec. 112(b) (1)). The SJVAPCD has also published a list of compounds it defines as potential toxic air contaminants (Toxics Policy, May 1991; Rule 2-1-316). Any pollutant that may be emitted from the project and is on the federal New Source Review List, the federal Clean Air Act list, and/or the SJVAPCD toxic air contaminant list has been evaluated.

Noncriteria pollutant emission factors for the analysis of emissions from the gas turbines were obtained from AP-42 (Table 3.1-3, 4/00, and Table 3.4-1 of the Background Document for Section 3.1), and from the California Air Resources Board's CATEF database for gas turbines.

[2] These pollutants are regulated under federal and state air quality programs; however, they are evaluated as noncriteria pollutants by the California Energy Commission (CEC).

Hazardous Air Pollutant Emissions
KRCDPP – GE LM6000 PC Sprint

Hazardous Air Pollutant	Emission Factor (lb/MMSCF)[1]	Maximum Hourly Emissions (lb/hr)[2]	Maximum Annual Emissions (tpy)[3]
Acetaldehyde	1.80E-01	0.082	0.15
Acrolein	3.69E-03	0.01	0.04
Ammonia (ppmv)	10	6.54	10.20
Benzene	3.33E-03	0.0015	0.0024
Benzo(a)anthracene*	2.26E-05	1.03E-05	1.60E-05
Benzo(a)pyrene*	1.39E-05	6.33E-06	9.85E-06
Benzo(b)fluoranthrene*	1.13E-05	5.14E-06	8.01E-06
Benzo(k)fluoranthrene*	1.10E-05	5.01E-06	7.80E-06
1,3-Butadiene	1.27E-04	5.78E-05	9.00E-05
Chrysene*	2.52E-05	1.15E-05	1.79E-05
Dibenz(a,h)anthracene*	2.35E-05	1.07E-05	1.67E-05
Ethyl benzene	3.26E-02	0.0148	0.03
Formaldehyde	3.67E-01	0.167	0.30
Hexane	2.59E-01	0.118	0.21
Indeno(1,2,3-cd)pyrene*	2.35E-05	1.07E-05	1.67E-05
Naphthalene*	1.66E-03	7.55E-04	1.18E-03
Propylene	7.70E-01	0.351	0.62
Propylene oxide	4.78E-02	0.022	0.04
Toluene	7.10E-02	0.032	0.060
Xylene	2.61E-02	0.012	0.02
Total (w/o NH_3)			**1.4738**
Total (w/ NH_3)			**11.6738**

(1) From AP-42 and CATEF databases, except for ammonia, which is based on 10 ppm.
(2) Based on a maximum hourly turbine fuel use of 467 MMBtu/hr (HHV) and fuel HHV of 1,025.9 Btu/scf. (0.455 MMscf/hr)
(3) Based on maximum annual turbine operation of 3,560 hours per year.
* Polycyclic Aromatic Hydrocarbon (PAH)

Although the turbines will be equipped with oxidation catalyst systems, only the acrolein and benzene emission factors reflect any control effectiveness.

Therefore, as emissions of each individual HAP are below 10 tons per year and total HAP emissions are below 25 tons per year, the WPD Peaking Plant will not be a major air toxics source and the provisions of this rule do not apply.

Rule 4001 New Source Performance Standards

40 CFR 60 – Subpart GG

40 CFR Part 60 Subpart GG applies to all stationary gas turbines with a heat input greater than 10.7 gigajoules per hour (10.2 MMBtu/hr), that commence construction, modification, or reconstruction after 10/03/77. Therefore, this subpart applies to the new turbine installation.

§60.332: Standards for Nitrogen Oxides

Paragraph (a) states, NO_X emissions from the turbine with a minimum heat input rating of 250 MMBtu/hr are limited by the following equation:

NO_X (% by vol @ 15% O_2) 1 hr avg = 0.0075(14.4/Y)+ F

where: Y = manufacturers rated heat load (kJ/W-hr)
= (9,811 Btu/kW-hr)(kW/1,000 W)(1,054.2 J/Btu)(kJ/1,000 J)[3]
= 10.34 kJ/W-hr (less than 14.4 kJ/W hour)

F = 0 (fuel bound nitrogen for natural gas fuel)

NO_X (% by vol @ 15% O_2) = 0.0075(14.4/10.34)+ 0
= 0.0104 %
= 104 ppmv @ 15% O2

Wellhead Power Delano is proposing a NO_X concentration limit of 2.5 ppmv @ 15% O_2 (3-hr average) as required by BACT. Therefore, compliance with the NSPS NO_X standard is expected.

§60.333: Standards for Sulfur Dioxide

Paragraphs (a) and (b) define the applicable SO_X limits as follows:

SO_X = 0.015% by vol @ 15% O_2
= 150 ppmv @ 15% O_2

or fuel S $\leq$ 0.8% by weight.

The 150 ppmv @ 15% O_2 limit specified in section 60.333, paragraph (a) is equivalent to 0.769 lb-SO_X/MMBtu as follows:

$$\frac{(150\ \text{ppmvd})\times\left(8{,}578\frac{\text{ft}^3}{\text{MMBtu}}\right)\times\left(64\frac{\text{lb}-\text{SO}_x}{\text{lb}-\text{mol}}\right)\times\left(\frac{20.9}{20.9-15}\right)}{\left(379.5\frac{\text{ft}^3}{\text{lb}-\text{mol}}\right)\times\left(10^6\right)} = 0.769\frac{\text{lb}-\text{SO}_x}{\text{MMBtu}}$$

SO_X emissions are based on combusting natural gas with a fuel sulfur content of 1.0 gr/100 scf, which results in an emission rate of 0.00285 lb-SO_X/MMBtu. The percent sulfur by weight of natural gas of 1.0 gr-S/100 scf natural gas is 0.00337%, determined as follows (assuming a 100 scf sample comprised of methane at 60 °F):

$$\left(\frac{1.0\,\text{gr}-\text{S}}{100\,\text{ft}^3-\text{NG}}\right)\times\left(\frac{\text{lb}-\text{S}}{7000\,\text{gr}-\text{S}}\right)\times\left(\frac{\text{ft}^3-\text{NG}}{0.0424\ \text{lb}-\text{NG}}\right) = 3.37\times10^{-5}\frac{\text{lb}-\text{S}}{\text{lb}-\text{NG}}$$

[3] The rated heat load for the GE Model LM600 PC Sprint turbine is 9,811 Btu/kW-hr, based on 47.6 MW nominal rating and a 467 MMBtu/hr heat input rating (HHV, full load, and 25 °F).

Both SO_X emissions and fuel sulfur content are less than that required by Subpart GG. Recordkeeping and reporting of the fuel sulfur content is required as specified in section 60.334 (b) (2). Reporting will be performed using an alternative custom reporting schedule. Refer to item G.2 (Monitoring Requirements) under the discussion of Rule 2201 in section VIII of this document for the alternative reporting schedule.

Reporting and notifications, and initial compliance testing will be required as specified in 40 CFR, Subpart A. Compliance is expected.

§60.334: Monitoring of Operations

Paragraph (b) states, *"The owner or operator of any stationary gas turbine subject to the provisions of this subpart shall monitor sulfur content and nitrogen content of the fuel being fired in the turbine."*

The following analysis shows that the proposed requirement of District Rule 4703 is more stringent than 40 CFR requirements pertaining to NO_x emissions. Streamlining procedures, as documented in the following steps is utilized to substitute the proposed set of requirements for the otherwise applicable requirements.

Step 1: Side-by-side Comparison of Applicable Requirements:

Type of Requirement	District Rule 4703	Subpart GG, § 60.332 and 60.334	Proposed Requirement
Emissions Limit	Section 5.1.2 - for > 10 MW, 5 ppm @ 15% O_2. (Tier II Standard Option)	60.332(a)(1) – 75 ppmv @ 15% O_2. (Lowest possible concentration)	5 ppm @ 15% O_2.
Work place standards	N/A	N/A	Use natural gas fuel.
Monitoring	(6.2.1) Except for units subject to Section 6.2.3, for turbines with exhaust gas NO_x control devices, the owner or operator shall either install, operate, and maintain continuous emissions monitoring equipment for NO_x and oxygen, as identified in Rule 1080 (Stack Monitoring), or install and maintain APCO-approved alternate monitoring	60.334(a) The owner or operator of any stationary gas turbine subject to the provisions of this subpart and using water injection to control NO_x emissions shall install or operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water to fuel being fired in the turbine. 60.334(b) Install, certify, maintain, operate, and quality-assure a continuous emissions monitoring system for NOx and O_2.	The owner or operator shall install, certify, maintain, operate, and quality-assure a system which continuously measures and records the exhaust gas NO_x and O_2 concentrations.

Type of Requirement	District Rule 4703	Subpart GG, § 60.332 and 60.334	Proposed Requirement
Reporting	As per District Rule 1080: Time intervals, data and magnitude of excess NOx emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred	60.334(J) the owner or operator shall submit reports of excess emissions and monitor downtime as required under §60.7(c), periods of excess emissions that shall be reported are defined as follows: 60.334(J)(1)(iii) - An hour of excess emissions shall be any operating hour in which 4-hour rolling average NOx concentration exceeds applicable emissions limit and a period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour for either NOx or diluent (or both). 60.334(J)(5): all reports required under §60.7(c) shall be post marked by 30th day following the end of each calendar quarter.	The owner or operator shall submit a written report of CEM operations for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess NOx emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative (monitor downtime), except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. Excess emissions shall be defined as any operating hour in which 4-hour rolling average NOx concentration exceeds applicable emissions limit and a period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour for either NOx or diluent (or both)
Testing	Annual Testing for nitrogen oxides (NOx) concentrations using EPA Method 20 or 7E and oxygen (O_2) using Method 3, 3A, or 20.	Initial NOx performance testing using EPA method 20 or 7E and EPA method 3, 3A for O_2.	Annual Testing for nitrogen oxides (NOx) concentrations using EPA Method 20 or 7E and oxygen (O_2) using Method 3, 3A, or 20.

The District Rule 4703 requirement to limit NOx concentration to 5 ppmv @ 15% O2 is clearly more stringent than the Subpart GG emissions limit of 75 ppmv as discussed below. According to Subpart GG of NSPS, the NO_x emissions must not exceed 75 or 150 ppmvd, corrected to standard ISO pressure, temperature and humidity using the ISO correction factor (40 CFR Part 60.332(a), (b)). The ISO correction factor may increase the NO_x emission concentration from the measured value. The template requires NO_x emissions to be below 5 ppmvd without ISO correction. Even with ISO correction the proposed NO_x requirement is more stringent than Subpart GG.

The proposed requirements for NO_x are not any more stringent than District Rule 4703. Therefore compliance is expected.

The following conditions, listed on the Authority to Construct, reference Rule 4001:

The permittee shall notify the District of the date of initiation of construction no later than 30 days after such date, the date of anticipated startup not more than 60 days nor less than 30 days prior to such date, and the date of actual startup within 15 days after such date. [District Rule 4001]

The turbine shall be equipped with a continuous monitoring system to measure and record hours of operation, mass ratio of water-to-fuel injected and fuel consumption. [District Rules 2201, 4001, and 4703]

The exhaust stack shall be equipped with a continuous emissions monitor (CEM) for NOx, CO, and O2. The CEMs shall meet the requirements of 40 CFR part 60, Appendices B and F (for CO), and 40 CFR part 75, Appendices A and B (for NOx and O2) and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [District Rules 1080, 2201, 4001, and 4703]

Emission rates from this unit, except during startup and shutdown, shall not exceed any of the following limits if the chiller system is installed: NOx (as NO2) - 4.3 lb/hr or 2.5 ppmvd @ 15% O2; SOx (as SO2) - 1.35 lb/hr; PM10 - 3.12 lb/hr; CO - 10.58 lb/hr or 10.0 ppmvd @ 15% O2; or VOC (as methane) - 1.21 lb/hr or 2.0 ppmvd @ 15% O2. Emissions rates, except during startup and shutdown, shall not exceed any of the following if the fogger system is installed: NOx (as NO2) - 4.03 lb/hr or 2.5 ppmvd @ 15% O2; SOx (as SO2) - 1.25 lb/hr; PM10 - 2.89 lb/hr; CO - 9.82 lb/hr or 10.0 ppmvd @ 15% O2; or VOC (as methane) - 1.12 lb/hr or 2.0 ppmvd @ 15% O2. All emission concentration limits are based on three hour rolling averages. [District Rules 2201, 4001, and 4703]

The following test methods shall be used: NOx - EPA Method 7E or 20, PM10 - EPA Method 5 (front half and back half), CO - EPA Method 10 or 10B, O2 - EPA Method 3, 3A, or 20, VOC - EPA Method 18 or 25, ammonia - BAAQMD ST-1B, and fuel gas sulfur content - ASTM D3246. NOx test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rules 1081, 4001, and 4703]

Operator shall submit a semiannual report to the APCO listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeded 0.8% by weight. [District Rule 4001]

Permittee shall provide notification and recordkeeping as required under 40 CFR, Part 60, Subpart A, 60.7. [District Rule 4001]

Rule 4002 National Emissions Standards for Hazardous Air Pollutants (NESHAP)

Pursuant to Section 2.0, "*All sources of hazardous air pollution shall comply with the standards, criteria, and requirements set forth therein;*" therefore, the requirements of this rule applies to the WPD Peaking Plant. But there are no applicable requirements for a non-major HAPs source; therefore, no actions are necessary to show compliance with this rule.

Rule 4101 Visible Emissions

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour that is as dark as or darker than Ringelmann 1 (or 20% opacity). Therefore compliance is expected.

Proposed Rule 4101 Conditions:

- No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
- Combustion turbine generator (CTG) and electrical generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exhibit opacity of 5% or greater, except for a period or periods not exceeding three minutes in any one hour. [District Rules 2201 and 4101]

Rule 4102 Nuisance

Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations provided the equipment is well maintained. Therefore, compliance with this rule is expected.

A. California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – Risk Management Policy for Permitting New and Modified Sources specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

A HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Appendix F), the total facility prioritization score including this project was greater than one. Therefore, a health risk assessment was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
S-6662-2-0	0.0359 per million	No

B. Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for

triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

Proposed Rule 4102 Conditions:

- No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
- *During startup periods (as defined in Rule 4703), CTG exhaust emissions shall not exceed any of the following limits: NOx (as NO2) - 20.0 lb/hr, CO - 15 lb/hr, VOC - 1.21 lb/hr for the chiller system or 1.12 lb/hr for the fogger system, based on three hour averages. [District Rules 2201 and 4102]*
- *During shutdown periods (as defined in Rule 4703), CTG exhaust emissions shall not exceed any of the following limits: NOx (as NO2) - 7.0 lb/hr, CO - 12 lb/hr, VOC - 1.21 lb/hr for the chiller system or 1.12 lb/hr for the fogger system, based on three hour averages. [District Rules 2201 and 4102]*
- Ammonia (NH3) emissions shall not exceed either of the following limits: 6.42 lb/hr (chiller option installed), 5.96 lb/hr (fogger system installed) or 10 ppmvd @ 15% O2 (based on a 24 hour rolling average). [District Rules 2201 and 4102]
- Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1) calculate the daily ammonia emissions using the following equation: (ppmvd @ 15% O2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) Utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O2. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation. [District Rule 4102]

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

$$\text{PM Conc. (gr/scf)} = \frac{\text{(PM emission rate) x (7000 gr/lb)}}{\text{(Air flow rate) x (60 min/hr)}}$$

PM_{10} emission rate = 3.12 lb/hr. Assuming 100% of PM is PM_{10}
H_2O = 10.09%

Exhaust Gas Flow, acfm (wet) = 549,151[4]
Exhaust Gas Flow, dscfm = 549,151 * [(100 – 10.09)/100] = 493,742

PM Conc. (gr/scf)=[(3.12 lb/hr) * (7,000 gr/lb)] ÷ [(493,742 ft^3/min) * (60 min/hr)]
PM Conc. = 0.00072 gr/scf

Since 0.00074 grain/dscf is less than 0.1 grain/dscf, compliance with this rule is expected.

Rule 4202 Particulate Matter Emission Rate

Rule 4202 establishes PM emission limits as a function of process weight rate in tons/hr. Gas and liquid fuels are excluded from the definition of process weight. Therefore, Rule 4202 does not apply to the CTG.

Rule 4301 Fuel Burning Equipment

Rule 4301 limits air contaminant emissions from fuel burning equipment as defined in the rule. Section 3.1 defines fuel burning equipment as "any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer".

The CTG primarily produces power mechanically, i.e. the products of combustion pass across the power turbine blades which cause the turbine shaft to rotate. The turbine shaft is coupled to an electrical generator shaft which is rotated to produce electricity. Because the CTG primarily produce power by mechanical means, it does not meet the definition of fuel burning equipment. Rule 4301 does not apply to the affected equipment.

Rule 4703 Stationary Gas Turbines

Rule 4703 is applicable to stationary gas turbines with a rating greater than 0.3 megawatts. The facility proposes to install one 47.6 MW gas turbines, therefore this rule applies.

Section 5.1.1 of this rule limits the NO_X emissions (excluding periods of thermal stabilization) from gas-fired stationary gas turbine systems greater than 10 MW, and equipped with Selective Catalytic Reduction (SCR), based on the following equation:

$$NO_X \text{ (ppmv @ 15\% } O_2) = 9 \times \left(\frac{EFF}{25}\right)$$

Where EFF is the higher of EFF_1 or EFF_2 where:

[4] Worst-case exhaust gas flow occurs with an Ambient temperatures of 103°F and CTG air inlet chillers off.

$$EFF_1 = \frac{3{,}412\ \frac{Btu}{kW-hr}}{\text{Actual Heat Rate @ HHV}\ (\frac{Btu}{kW-hr})} \times 100, \text{ and } EFF_2 = EFF_{MFR}\ \frac{LHV}{HHV}$$

EFF_2 = EFF_{mfr} * (LHV/HHV)

Calculated data indicates that the Actual Heat Rate @ HHV is 9,811 Btu/KW-hr. Therefore:

$$EFF_1 = \frac{3{,}412\ \frac{Btu}{kW-hr}}{9{,}811\ \frac{Btu}{kW-hr}} \times 100 = 34.77\%$$

$$NO_X \text{ limit utilizing } EFF_1 = 9 \times \left(\frac{34.77}{25}\right) = 12.5 \text{ ppmvd @ } 15\%\ O_2$$

EFF_2 calculations are not necessary since Rule 4703 emission limits will be no lower than 9 ppmv NO_X and the proposed turbines will be limited to a maximum of 2.5 ppmv NO_X @ 15% O_2 (based on a 3-hour average), therefore compliance is expected.

Section 5.1.2 (Tier 2) of this rule limits the NO_X emissions (excluding periods of thermal stabilization) from stationary gas turbine systems greater than 10 MW to 5 ppmv @ 15% O_2 (Standard option) and 3 ppmv @ 15% O_2 (Enhanced Option). Section 7.2.1 (Table 7-1) sets a compliance date of April 30, 2005 for the Standard Option and Section 7.2.4 sets a compliance date of April 30, 2008 for the Enhanced Option. As discussed above, the proposed turbines will be limited to 2.5 ppmv @ 15% O_2 (based on a 3-hour average); therefore compliance with this section is expected.

Section 5.2 limits the CO emissions from stationary gas turbine systems subject to Section 5.1.1 to 200 ppmv CO @ 15% O_2. The proposed turbines will be limited to a maximum of 10 ppmv CO @ 15% O_2, therefore compliance is expected.

Monitoring and recordkeeping:

Sections 6.2 and 6.3 contain the following monitoring, recordkeeping and source testing requirements.

- 6.2.1 Except for units subject to Section 6.2.3, for turbines without exhaust-gas NO_X control devices; install, operate, and maintain continuous emissions monitoring equipment for NO_X and oxygen or install and maintain an APCO-approved alternate monitoring scheme.

- 6.2.2 Except for units subject to Section 6.2.3, for turbines without exhaust-gas NO_X control devices and without continuous emissions monitoring equipment; monitor operational characteristics recommended by the turbine manufacturer or emission control system supplier, and approved by the APCO.

- 6.2.3 Turbines rated at over 10 MW that operated an average of over 4,000 hours during the last three years before August 18, 1994, are required to install, operate, and maintain in calibration a continuous emissions monitoring system for NO_X. The applicant is proposing a CEMS for NO_X.

- 6.2.4 Maintain records for inspection at any time for a period of five years.

- 6.2.5 Correlate control system operating parameters with NO_X emissions. This requirement applies to the selective catalytic reduction system. This information may be used by the APCO to determine compliance when the continuous emissions monitoring system not operating properly.

- 6.2.6 Maintain an operating log that includes, on a daily basis, the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation, type and quantity of fuel used (liquid/gas).

- 6.3.1 Provide source test information annually regarding the exhaust gas NO_X and CO concentrations, and, if used as a basis for Tier 1 emission limit calculations, the demonstrated percent efficiency (EFF) of the stationary gas turbines.

- 6.3.3 The owner or operator of any unit with an intermittently operated auxiliary burner shall demonstrate compliance with the auxiliary burner both on and off.

The facility must demonstrate compliance annually with the NO_X and CO emission limits using the following test methods:

- Oxides of nitrogen emissions for compliance tests shall be determined by using EPA Method 7E or EPA Method 20.

- Carbon monoxide emissions for compliance tests shall be determined by using EPA Test Methods 10 or 10B.

- Oxygen content of the exhaust gas shall be determined by using EPA Methods 3, 3A, or 20.

- HHV and LHV of gaseous fuels shall be determined by using ASTM D3588-91, ASTM 1826-88, or ASTM 1945-81.

These requirements will be included as permit conditions. Therefore, compliance with this rule is expected.

- Startup and shutdown times, as defined in Rule 4703, shall not exceed two hours in any one day. Startup/shutdown emissions shall be counted toward all applicable emission limits (lb/day and lb/year). [District Rules 2201 and 4703]

- Emission rates from this unit, except during startup and shutdown, shall not exceed any of the following limits if the chiller system is installed: NOx (as NO2) - 4.3 lb/hr or 2.5 ppmvd @ 15% O2; SOx (as SO2) - 1.35 lb/hr; PM10 - 3.12 lb/hr; CO - 10.58 lb/hr or 10.0 ppmvd @ 15% O2; or VOC (as methane) - 1.21 lb/hr or 2.0 ppmvd @ 15% O2. Emissions rates, except during startup and shutdown, shall not exceed any of the following if the fogger system is installed: NOx (as NO2) - 4.03 lb/hr or 2.5 ppmvd @ 15% O2; SOx (as SO2) - 1.25 lb/hr; PM10 - 2.89 lb/hr; CO - 9.82 lb/hr or 10.0 ppmvd @ 15% O2; or VOC (as methane) - 1.12 lb/hr or 2.0 ppmvd @ 15% O2. All emission concentration limits are based on three hour rolling averages. [District Rules 2201, 4001, and 4703]

- Prior to the issuance of the Permit to Operate, the permittee shall submit to the District information correlating the NOx control system operating parameters to the associated measured NOx output. The information must be sufficient to allow the District to determine compliance with the NOx emission limits of this permit when no continuous emission monitoring data for NOx is available or when the continuous emission monitoring system is not operating properly. [District Rule 4703]

- The turbine shall be equipped with a continuous monitoring system to measure and record hours of operation; mass ratio of water-to-fuel injected, and fuel consumption. [District Rules 2201, 4001, and 4703]

- The exhaust stack shall be equipped with a continuous emissions monitor (CEM) for NOx, CO, and O2. The CEMs shall meet the requirements of 40 CFR part 60, Appendices B and F (for CO), and 40 CFR part 75, Appendices A and B (for NOx and O2) and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [District Rules 1080, 2201, 4001, and 4703]

- Source testing to measure the NOx, CO, VOC, and NH_3 emission rates (lb/hr and ppmvd @ 15% O2) and PM10 emission rate (lb/hr) shall be conducted within 60 days after commissioning is complete and at least once every twelve months thereafter. [District Rules 1081 and 4703]

- The following test methods shall be used: NOx - EPA Method 7E or 20, PM10 - EPA Method 5 (front half and back half), CO - EPA Method 10 or 10B, O2 - EPA Method 3, 3A, or 20, VOC - EPA Method 18 or 25, ammonia - BAAQMD ST-1B, and fuel gas sulfur content - ASTM D3246. NOx test results shall be corrected to ISO standard

conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rules 1081, 4001, and 4703]

- The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 2201 and 4703]

- The permittee shall maintain the following records: hours of operation, fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitor measurements, calculated ammonia slip, and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). [District Rules 2201 and 4703]

- All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4703]

Rule 4801 Sulfur Compounds

A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO_2, on a dry basis averaged over 15 consecutive minutes.

Using the ideal gas equation and the emission factors presented in Section VII, the sulfur compound emissions are calculated as follows:

$$\text{Volume } SO_2 = \frac{n\,RT}{P}$$

With:

N = moles SO_2
T (Standard Temperature) = 60°F = 520°R
P (Standard Pressure) = 14.7 psi

$$R \text{ (Universal Gas Constant)} = \frac{10.73\,\text{psi}\cdot\text{ft}^3}{\text{lb}\cdot\text{mol}\cdot{}^\circ\text{R}}$$

$$\frac{0.00285\text{lb}-\text{SOx}}{\text{MMBtu}}\times\frac{\text{MMBtu}}{8{,}578\text{dscf}}\times\frac{1\text{lb}\cdot\text{mol}}{64\text{lb}}\times\frac{10.73\text{psi}\cdot\text{ft}^3}{\text{lb}\cdot\text{mol}\cdot{}^\circ\text{R}}\times\frac{520{}^\circ\text{R}}{14.7\text{psi}}\times\frac{1{,}000{,}000\cdot\text{parts}}{\text{million}}=1.97\frac{\text{parts}}{\text{million}}$$

$$\text{Sulfur Concentration} = 1.97 \frac{\text{parts}}{\text{million}} < 2{,}000 \text{ ppmv (or 0.2\%)}$$

Therefore, compliance with District Rule 4801 requirements is expected.

Rule 8011 General Requirements

This rule contains general requirements pertaining to all Regulation XIII prohibitions. Applicable sections of Rule 8011 are referenced from the specific prohibitory rules. Therefore, compliance with Rules 8031, 8041, and 8071, as evaluated below, will meet the requirements of Rule 8011.

Rule 8021 Construction, Demolition, Excavation, Extraction and Other Earthmoving Activities

The purpose of this rule is to limit fugitive dust emissions from construction, demolition, excavation, and other earthmoving activities. It requires the use of control measures to maintain visible dust emissions (VDE) under the 20% opacity requirement.

The WPD will commit to the use of dust control measures (e.g., water, approved chemical stabilizers, etc.) during construction to maintain opacity to a level below 20% per Rule 8021 requirements. Compliance with the requirements of this rule is anticipated.

Proposed Rule 8021 Condition:

- *Disturbances of soil related to any construction, demolition, excavation, extraction, or other earthmoving activities shall comply with the requirements for fugitive dust control in District Rule 8021 unless specifically exempted under Section 4.0 of Rule 8021 (11/15/01) or Rule 8011 (11/15/01). [District Rules 8011 and 8021]*

- *An owner/operator shall submit a Dust Control Plan to the APCO prior to the start of any construction activity on any site that will include 10 acres or more of disturbed surface area for residential developments, or 5 acres or more of disturbed surface area for non-residential development, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days. [District Rules 8011 and 8021]*

Rule 8031 Bulk Materials

This rule limits Visible Dust Emissions (VDE) from bulk material handling operations to a maximum 20% opacity. Section 5, Table 8031-1, prescribes the required control measures.

Handling of Bulk Materials:

Table 8031-1, Section A, prescribes the following control measures for handling of bulk materials:

a) Apply water or chemical/organic stabilizers/suppressants sufficient to limit Visible Dust Emissions to 20% opacity or;
b) Construct and maintain wind barriers sufficient to limit Visible Dust Emissions to 20% opacity and with less than 50% porosity. If utilizing wind fences or barriers, control measure (a) shall also be implemented.

The following condition will be placed on the permit to ensure compliance:

- *Water or chemical/organic stabilizers/suppressants shall be applied when handling bulk materials as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, wind barriers with less than 50% opacity shall also be used. [District Rule 2201, 4101, and 8031]*

Storage of Bulk Materials:

Table 8031-1, Section B, prescribes the following control measures for storage of bulk materials:

a) When storing bulk materials, comply with the conditions for a stabilized surface as defined in Rule 8011; or
b) Cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action; or
c) Construct and maintain wind barriers sufficient to limit Visible Dust Emissions to 20% opacity and with less than 50% porosity. If utilizing fences or wind barriers, apply water or chemical/organic stabilizers/suppressants to limit Visible Dust Emissions to 20% opacity or;
d) Utilize a 3-sided structure with a height at least equal to the height of the storage pile and with less than 50% porosity.

The following condition will be placed on the permit to ensure compliance:

- *Water or chemical/organic stabilizers/suppressants shall be applied when storing bulk materials as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, all bulk material piles shall also be either maintained with a stabilized surface as defined in Section 3.58 of District Rule 8011, or shall be protected with suitable covers or barriers as prescribed in Table 8031-1, Section B, of District Rule 8031. [District Rules 8011 and 8031]*

On-Site Transporting of Bulk Materials:

Table 8031-1, Section C, prescribes the following control measures for on-site transporting of bulk materials:

a) Limit vehicular speed while traveling on the work site sufficient to limit Visible Dust Emissions to 20% opacity; or
b) Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported across any paved public access road sufficient to limit Visible Dust Emissions to 20% opacity, or
c) Apply water to the top of the load sufficient to limit Visible Dust Emissions to 20% opacity, or
d) Cover haul trucks with a tarp or other suitable cover.

The following condition will be placed on the permit to ensure compliance:

- *All bulk material transport vehicles shall limit Visible Dust Emissions to 20% opacity by either limiting vehicular speed, maintaining sufficient freeboard on the load, applying water to the top of the load, or covering the load with a tarp or other suitable cover.[District Rules 2201, 4101, 8011, and 8031]*

Off-Site Transporting of Bulk Materials:

Table 8031-1Section D prescribes the following control measures for off-site transporting of bulk materials:

a) Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site; and
b) Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate; and
c) Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported on any paved public access road, and apply water to the top of the load sufficient to limit Visible Dust Emissions to 20% opacity; or cover haul trucks with a tarp or other suitable cover.

The following condition, previously mentioned, will be placed on the permit to ensure compliance:

- *All bulk material transport vehicles shall limit Visible Dust Emissions to 20% opacity by either limiting vehicular speed, maintaining sufficient freeboard on the load, applying water to the top of the load, or covering the load with a tarp or other suitable cover.[District Rules 2201, 4101, 8011, and 8031]*

Outdoor Transport of Bulk Materials with a Chute or Conveyor:

Table 8031-1, Section E, prescribes the following control measures for outdoor transport of bulk materials with a chute or conveyor:

a. Fully enclose the chute or conveyor; or
b. Operate water spray equipment that sufficiently wets materials to limit VDE to 20% opacity; or
c. Wash separated or screened materials to remove conveyed materials having an aerodynamic diameter of 10 microns or less sufficient to limit VDE to 20% opacity.

Since this facility will not be utilizing any chutes or conveyors, the above provisions do not apply to this facility.

Proposed Rule 8031 Condition:

- *Outdoor handling, storage, and transport of any bulk material shall comply with the requirements of SJVUAPCD District Rule 8031 (11/15/01), unless specifically exempted under section 4.0 of Rule 8031. [District Rule 8031]*

Section 6.0 of Rule 8031 requires the facility to maintain records in accordance with the requirements of Rule 8011. The following condition will be placed on the permit to ensure compliance:

- *Records and other supporting documentation shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8031, 8071, and 8011]*

Based on the above evaluation of the proposed VDE control measures, compliance with Rule 8031 is expected.

Rule 8041 **Carryout and Trackout**

This rule applies to all sites that are subject to any of the following rules where carryout or trackout has occurred or may occur on paved public roads or on the paved shoulders of a paved public road: Rules 8021 (Construction, Demolition, Excavation, Extraction, and other Earthmoving Activities), 8031 (Bulk Materials), 8061 (Paved and Unpaved Roads), and 8071 (Unpaved Vehicle and Equipment Traffic Areas).

This rule requires an owner/operator to sufficiently prevent or cleanup carryout and trackout as specified in sections 5.1 through 5.9. In addition to the specific requirements of this rule, the facility shall comply with all other applicable requirements of Regulation VIII.

The following conditions will be placed on the permit to ensure compliance:

- *An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041 Section 5.0, unless specifically exempted under Section 4.0 of Rule 8041 (8/19/04) or Rule 8011(8/19/04). [District Rules 8041 and 8011]*

- *All sites that are subject to SJVUAPCD District Rule 8021, SJVUAPCD District Rule 8031, and SJVUAPCD District Rule 8071 shall comply with the requirements of SJVUAPCD District Rule 8041 (11/15/01), unless specifically exempted under section 4.0 of Rule 8041. [District Rule 8041]*

Rule 8051 Open Areas

Pursuant to Section 2.0, this rule is applicable to any open area having 3.0 acres or more of disturbed surface area that has remained undeveloped, unoccupied, unused or vacant for more than seven days. The following condition will be included on the permit to satisfy the requirements of the rule.

Proposed Rule 8051 Condition:

- *Whenever open areas are disturbed, or vehicles are used in open areas, the facility shall comply with the requirements of Section 5.0 of District Rule 8051, unless specifically exempted under Section 4.0 of Rule 8051 (11/15/01) or Rule 8011 (11/15/01). [District Rules 8011 and 8051]*

Rule 8061 Paved and Unpaved Roads

Pursuant to Section 2.0, this rule applies to any new or existing public or private paved or unpaved road, road construction project, or road modification project. The provisions of this rule shall be effective on and after May 15, 2002. The following condition will be included on the permit to satisfy the requirements of the rule.

Proposed Rule 8061 Condition:

- *Any paved road or unpaved road shall comply with the requirements of District Rule 8061 unless specifically exempted under Section 4.0 of Rule 8061 (11/15/01) or Rule 8011 (11/15/01). [District Rules 8011 and 8061]*

Rule 8071 Unpaved Vehicle/Equipment Traffic Areas

The purpose of this rule is to limit fugitive dust emissions from unpaved vehicle and equipment traffic areas. Section 5.1 of this rule requires implementation of at least one specific control measure for Visible Dust Emissions whenever the Average Annual Daily

Trips (AADT) will exceed 50, Vehicle Daily Trips (VDT) will exceed 150, VDT with 3 or more axles will exceed 25, or when 1000 or more vehicles will park or travel in the area in a given day. Specified control measures are:

1. Implement an APCO-approved Fugitive PM10 Management Plan as specified in Rule 8011 (General Requirements):
2. Watering
3. Uniform layer of washed gravel
4. Chemical/organic dust stabilizers/suppressants in accordance with the manufacturer's specifications;
5. Vegetative materials
6. Paving
7. Road mix
8. Any other method(s) that can be demonstrated to the satisfaction of the APCO that effectively limits VDE to 20% opacity and meets the conditions of a stabilized unpaved road.

Section 5.2 requires that one or more specific control measures be implemented on each day that 50 or more VDT, or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area.

Section 5.3 requires an owner/operator to restrict access and periodically stabilize a disturbed surface area whenever a site becomes inactive to comply with the conditions for a stabilized surface as defined in Rule 8011. The following condition will be placed on permit the permit to ensure compliance:

- *Whenever any portion of the site becomes inactive, Permittee shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in Section 3.58 of District Rule 8011. [District Rules 8071 and 8011]*

Section 6.0 of this rule requires the owner/operator to comply with the recordkeeping requirements specified in Rule 8011. The following condition, previously mentioned, will be placed on the permit to ensure compliance:

- *Records and other supporting documentation shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8031, 8071, and 8011]*

Compliance with all Regulation 8 requirements is expected.

California Health & Safety Code, Section 42301.6(School Notice)

As discussed in Section III of this evaluation, this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Health & Safety Code, Section 44300 (Air Toxic "Hot Spots")

Section 44300 of the California Health and Safety Code requires submittal of an air toxics "Hot Spot" information and assessment report for sources with criteria pollutant emissions greater than 10 tons per year. However, Section 44344.5 (b) states that a new facility shall not be required to submit such a report if all of the following conditions are met:

1. The facility is subject to a District permit program established pursuant to Section 42300.
2. The District conducts an assessment of the potential emissions or their associated risks, and finds that the emissions will not result in a significant risk.
3. The District issues a permit authorizing construction or operation of the new facility.

A health risk screening assessment was performed for the proposed project. The acute and chronic hazard indices are less than 1.0 and the cancer risk is less than one in a million, which are the thresholds of significance for toxic air contaminants. This project qualifies for exemption per the above exemption criteria.

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Tulare County is the Lead Agency for CEQA. They issued a Notice of Determination (NOD) for the proposed gas turbine (NOD # PSP-05-088 (ZA)). A copy of the Notice of Determination is included in Appendix G.

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). The District's engineering evaluation of the project (this document) demonstrates that compliance with District rules and permit conditions would reduce Stationary Source emissions from the project to levels below the District's significance thresholds for criteria pollutants. The District has determined that no additional findings are required (CEQA Guidelines §15096(h)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authority to Construct S-6662-2-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix L.

X. Billing Information

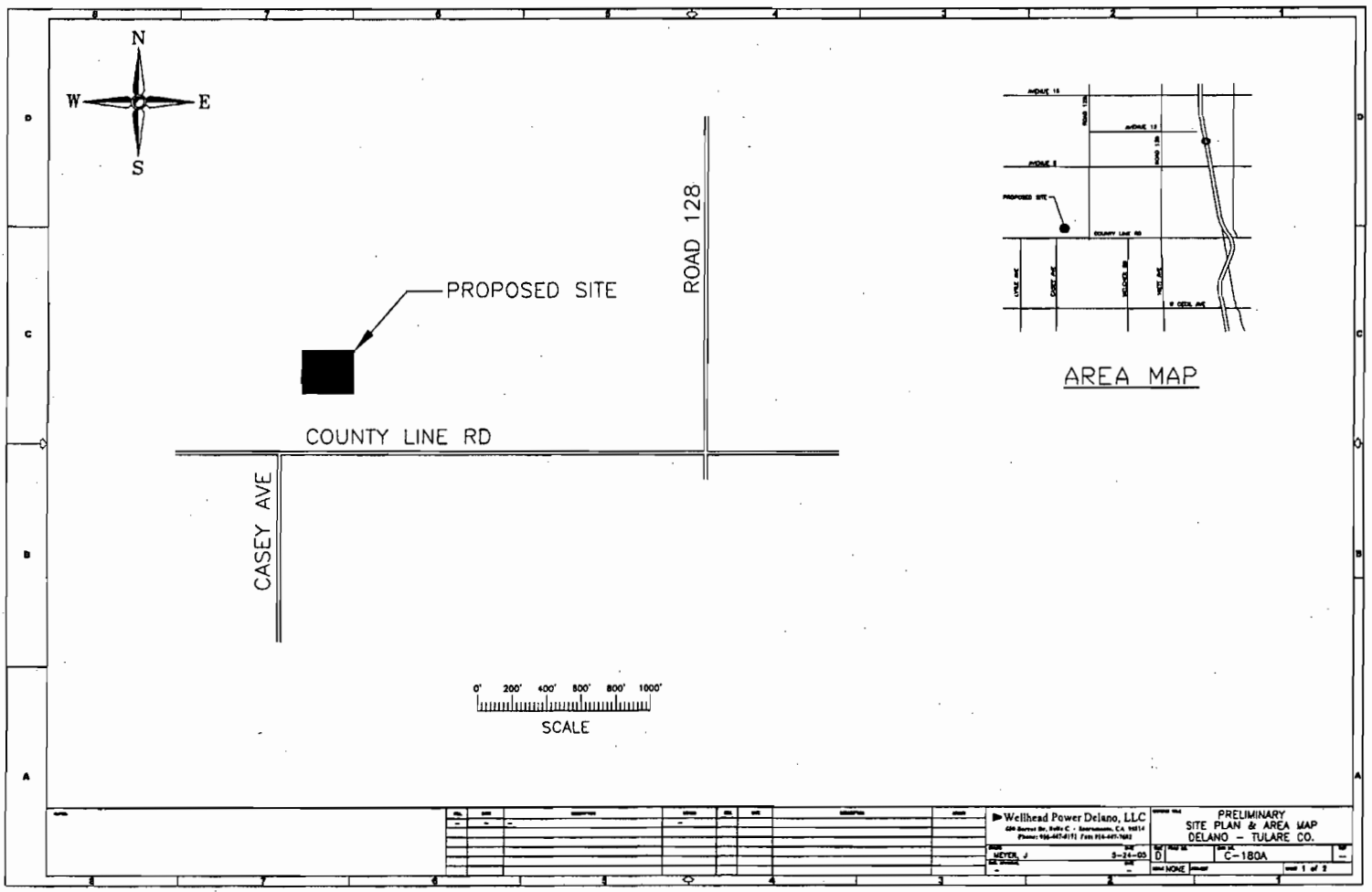
Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-6662-2-0	3020-8B-G	46,700 kW	$8,757.00

Appendices

A Project location and site plan
B Equipment specifications
C Quarterly net emissions change (QNEC)
D Best Available Control Technology (BACT) guideline
E Top-down BACT analysis
F Ambient Air Quality Impact Analysis (AAQIA) and Risk Management Review (RMR)
G California Environmental Quality Act (CEQA)
Notice of Determination (NOD) PSP-05-088 (ZA)
H Copy of Acid Rain permit application to EPA
I Commissioning Emissions
J Copy of previously issued ATC
K Emission profiles
L Draft ATC

Appendix A

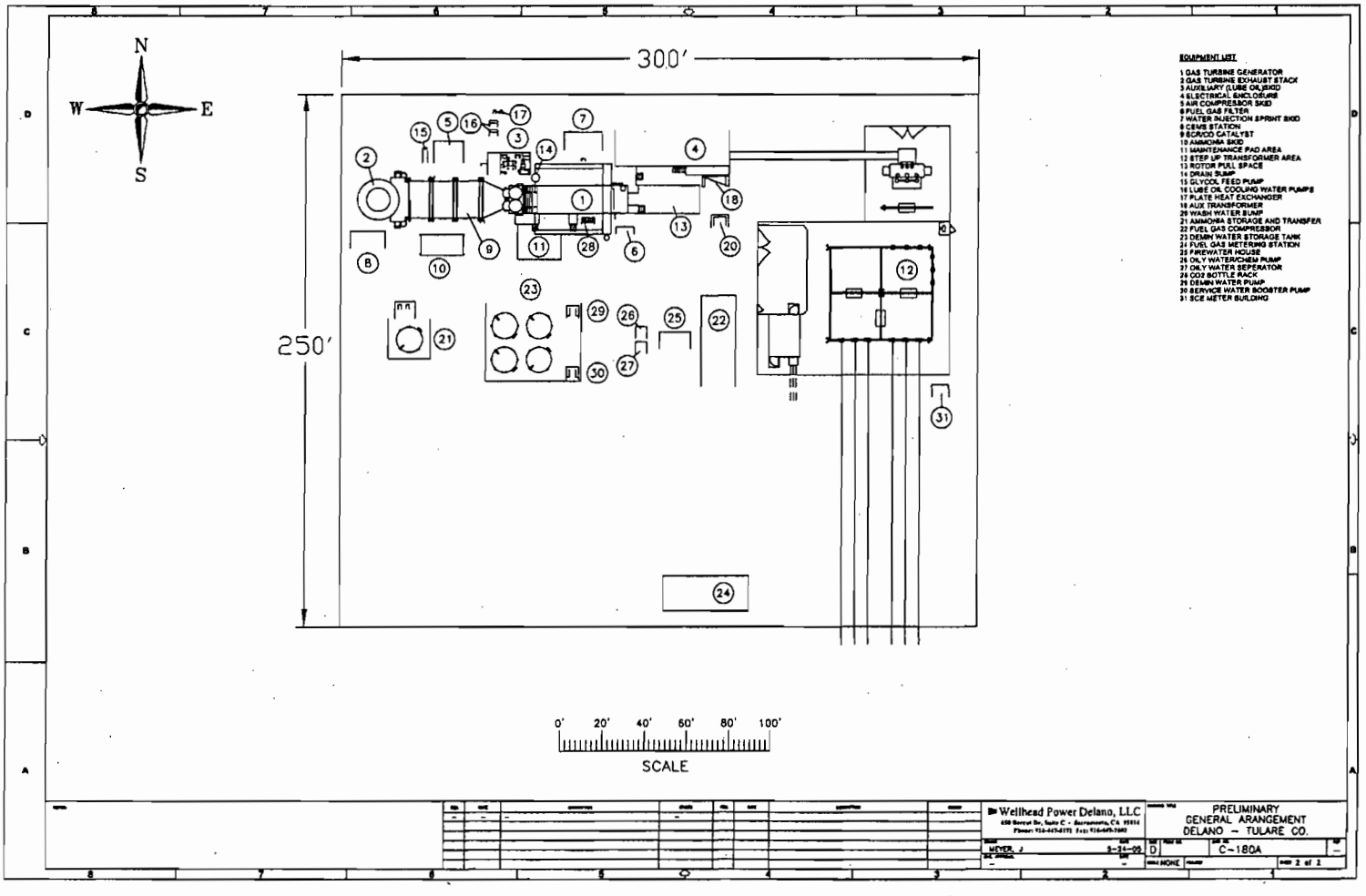
Project location and site plan



Wellhead Power Delano, LLC

PRELIMINARY
SITE PLAN & AREA MAP
DELANO – TULARE CO.

C-180A

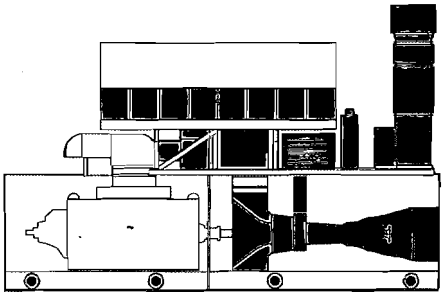

N
W
E
S
300'
250'
EQUIPMENT LIST
1 GAS TURBINE GENERATOR
2 GAS TURBINE EXHAUST STACK
3 AUXILIARY (LUBE OIL)SKID
4 ELECTRICAL ENCLOSURE
5 AIR COMPRESSOR SKID
6 FUEL GAS FILTER
7 WATER INJECTION SPRINT SKID
8 CEMS STATION
9 SCR/CO CATALYST
10 AMMONIA SKID
11 MAINTENANCE PAD AREA
12 STEP UP TRANSFORMER AREA
13 ROTOR PULL SPACE
14 DRAIN SUMP
15 GLYCOL FEED PUMP
16 LUBE OIL COOLING WATER PUMPS
17 PLATE HEAT EXCHANGER
18 AUX TRANSFORMER
20 WASH WATER SUMP
21 AMMONIA STORAGE AND TRANSFER
22 FUEL GAS COMPRESSOR
23 DEMIN WATER STORAGE TANK
24 FUEL GAS METERING STATION
25 FIREWATER HOUSE
26 OILY WATER/CHEM PUMP
27 OILY WATER SEPERATOR
28 CO2 BOTTLE RACK
29 DEMIN WATER PUMP
30 SERVICE WATER BOOSTER PUMP
31 SCE METER BUILDING
0' 20' 40' 60' 80' 100'
SCALE
Wellhead Power Delano, LLC
PRELIMINARY
GENERAL ARRANGEMENT
DELANO – TULARE CO.
MEYER, J
5-24-05
D
C-180A
NONE
SHEET 2 of 2

Appendix B

Equipment specifications

SPRINT™ 60-Hz Generator Sets

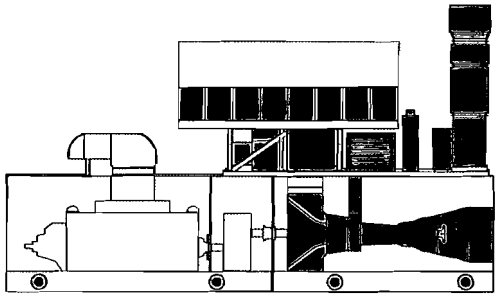
Base Plate Length	56' 6"	(17.22 m)
Base Plate Width	13' 6"	(4.11 m)
Enclosure Height	14' 6"	(4.42 m)
Overall Length	56' 9"	(17.30 m)
Overall Width*	49' 9"	(15.16 m)
Overall Height*	36' 2"	(11.02 m)
Base Plate Foundation Load*	476,000 lb	(214,200 kg)



	Power kW	Heat Rate Btu/kWh LHV	Heat Rate kJ/kWh LHV	No. Shafts	Pressure Ratio	Shaft Speed rpm	Exhaust Flow lb/s	Exhaust Flow kg/s	Exhaust Temp. °F	Exhaust Temp. °C
LM6000PC SPRINT™ *	50080	8434	8916	2	30.9	3600	295	134	826	441
LM6000PC	43417	8112	8549	2	29.1	3600	281	127	831	444
LM6000PD SPRINT™	46824	8235	8688	2	30.7	3600	290	131	837	447
LM6000PD	42336	8308	8765	2	29.3	3600	278	126	846	452
LM6000PD (liquid fuel)	40212	8415	8878	2	28.1	3600	268	122	857	458
LM2500PK	30676	8834	9300	2	23.6	3600	192	87.1	958	514
LM2500PV	30463	8854	9069	2	22.6	6100	186	84.3	931	499
LM2500PH**	27763	8391	8775	2	20.2	3600	167	75.9	926	497
LM2500PE	22719	9311	9789	2	19.1	3600	153	69.4	992	533

SPRINT™ 50-Hz Generator Sets

Base Plate Length	64' 7"	(19.69 m)
Base Plate Width	13' 6"	(4.11 m)
Enclosure Height	14' 6"	(4.42 m)
Overall Length	64' 10"	(19.76 m)
Overall Width*	49' 3"	(15.01 m)
Overall Height*	37' 11"	(11.56 m)
Base Plate Foundation Load*	522,000 lb	(234,900 kg)



	Power kW	Heat Rate Btu/kWh LHV	Heat Rate kJ/kWh LHV	No. Shafts	Pressure Ratio	Shaft Speed rpm	Exhaust Flow lb/s	Exhaust Flow kg/s	Exhaust Temp. °F	Exhaust Temp. °C
LM6000PC SPRINT™ *	50041	8461	8961	2	31.0	3627	297	135	821	438
LM6000PC	42890	8173	8617	2	29.1	3627	282	128	825	441
LM6000PD SPRINT™	46902	8272	8739	2	30.9	3627	292	133	834	446
LM6000PD	41711	8374	8846	2	29.3	3627	279	127	838	448
LM6000PD (liquid fuel)	40376	8452	8917	2	28.5	3627	272	123	853	456
LM2500PK	29244	9177	9675	2	22.8	3000	193	87.7	967	519
LM2500PV	30349	8577	9069	2	21.5	6100	186	84.3	931	499
LM2500PH**	26463	8673	9080	2	19.4	3000	168	76.2	932	500
LM2500PE	21719	9653	10141	2	18	3000	154	69.8	1000	538

Mechanical-Drive Sets

	Heat Rate Btu/kWh LHV	No. Shafts	Pressure Ratio	Shaft Speed rpm	Exhaust Flow lb/s	Exhaust Flow kg/s	Exhaust Temp. °F	Exhaust Temp. °C
LM6000PC	5941	2	29.1	3600	281.9	127.8	825	440
LM2500PK	6442	2	22.5	3600	192.0	87.1	958	514
LM2500PV	6187	2	21.5	6100	186.0	84.3	931	499
LM2500PE	6773	2	22.8	3600	153.0	69.4	992	533

Note: Performance based on 59° F amb. Temp. 60% RH, sea level, no inlet/exhause losses on gas fuel without NOx media, unless otherwise specified.

*SPRINT™ 2002 deck is used with water injection to 25ppmvd for power enhancement

**Rating includes use of 50,000 lb/hr steam injection.

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3/03

San Joaquin Valley Air Pollution Control District
Supplemental Application Form

RECEIVED
JUN 15 2010
SJVAPCD
Southern Region

Gas Turbines

Please complete one form for each gas turbine.

This form must be accompanied by a completed Application for Authority to Construct and Permit to Operate form

PERMIT TO BE ISSUED TO: **Wellhead Power Delano, LLC**

EQUIPMENT DESCRIPTION

[illegible]	☐ Industrial Frame ☒ Aero Derivative ☐ Other: ______		
	Manufacturer: **GE**	Model: **LM-6000 PC SPRINT**	Serial Number:
	☒ Simple Cycle ☐ Combined Cycle ☐ Co-generation ☐ Other: ______		
	Nominal (ISO) Rating: **47.6** MW (at 1 atm, 59°F, 60% Relative Humidity)		
	Is the unit equipped with an auxiliary/duct burner? ☐ Yes ☒ No (Note: If yes, please complete a *Boiler, Steam Generator, Dryer, and Process Heater Supplemental Application form* for the unit.)		
[illegible]	☐ Peaking Unit - limited to no more than 877 hrs/yr of operation ☐ Emergency Standby - limited to less than 200 hrs/yr of operation ☒ Full Time - must have either a Continuous Emission Monitoring System (CEMS) or an alternate emissions monitoring plan (must be approved by the APCO) ☒ CEMS, please specify all pollutants monitored: ☒ NO_x ☒ CO ☒ O_2 ☐ Other: ______ ☐ Alternate Emissions Monitoring Plan (please provide details in additional documentation)		
[illegible]	☒ Gaseous Fuel Meter ☐ Liquid Fuel Meter ☐ None		
[illegible]	Will this unit be used in an electric utility rate reduction program? ☐ Yes ☒ No		
[illegible]	Manufacturer: **GE**	Model: **LM-6000 PC SPRINT**	Number of Combustors: **1**
	Maximum Heat Input Rating (for all combustors @ ISO standard conditions): 467,000,000 Btu/hr		
	Water Injection: ☒ Yes ☐ No	Dry Low NO_x Technology: ☐ Yes ☒ No	
	Steam Injection: ☐ Yes ☒ No	Other NO_x Control Technology: **SCR, CO catalysts**	

EMISSIONS DATA

[illegible]

Primary Fuel	Fuel Type: ☒ Natural Gas ☐ LPG/Propane ☐ Diesel ☐ Other: ______		
	Higher Heating Value: ______ Btu/gal or 1000 Btu/scf	Sulfur Content: **0.000033**% by weight or ______ gr/scf	
	Maximum Fuel Use @ HHV: **472,000** scf/hr or ______ gal/hr	Rated Efficiency (EFF_{Mfg}): ______ %	

Primary Fuel Emissions Data	Operational Mode	Steady State (ppmv)	Steady State (lb/MMBtu)	Start-up (ppmv)	Start-up (lb/hr)	Shutdown (ppmv)	Shutdown (lb/hr)
	Nitrogen Oxides	**2.5**			**20.0**		**7.0**
	Carbon Monoxide	**10.0**			**15.0**		**12.0**
	Volatile Organic Compounds	**2.0**			**1.0**		**1.0**
	Duration			1 hr/day	230 hr/yr	1 hr/day	230 hr/yr
	% O_2, dry basis, if corrected to other than 15%: ______ %						

EMISSIONS DATA (continued)

Secondary Fuel

When will the secondary fuel be used?
☐ Primary fuel curtailment ☐ Simultaneously with primary fuel ☐ Other: _____

Fuel Type: ☐ Natural Gas ☐ LPG/Propane ☐ Diesel ☐ Other: _____

Higher Heating Value: _____ Btu/gal or _____ Btu/scf | Sulfur Content: _____ % by weight or _____ gr/scf

Maximum Fuel Use @ HHV: _____ scf/hr or _____ gal/hr | Rated Efficiency (EFF_{Mfg}): _____ %

Proposed Fuel Combustion Data

Operating Mode	Steady State (ppmv)	Steady State (lb/MMBtu)	Start-up (ppmv)	Start-up (lb/hr)	Shutdown (ppmv)	Shutdown (lb/hr)
NOx						
CO						
VOC						
Duration			_____ hr/day	_____ hr/yr	_____ hr/day	_____ hr/yr

% O_2, dry basis, if corrected to other than 15%: _____ %

Source of Data

☐ Manufacturer's Specifications ☐ Emission Source Test ☐ Other _____ (please provide copies)

EMISSIONS CONTROL

Emission Control Equipment

☒ Inlet Air Filter/Cooler ☒ Lube Oil Vent Coalescer

☒ Selective Catalytic Reduction - Manufacturer: **Cormetech or Equal** Model: _____
☒ Ammonia (NH_3) ☐ Urea ☐ Other: _____

☒ Oxidation Catalyst - Manufacturer: **Engelhard or Equal** Model: **Camet CO Oxidation Catalyst**

Control Efficiencies: NO_x 90 %, SO_x _____ %, PM_{10} ____ %, CO 71%, VOC 80%

☐ Other (please specify):

For units equipped with exhaust gas NO_x control equipment and rated < 10 MW, or rated ≥ 10 MW but operated < 4,000 hr/yr, one may choose at least one of the following alternate emission monitoring schemes in lieu of a CEMS (each option below must be approved by APCO on a case-by-case basis. Please include a detailed proposal for each option chosen):

☐ Periodic NO_x emission concentration ☐ Turbine exhaust O_2 concentration ☐ Air-to-Fuel ratio
☐ Flow rate of reducing agents added to turbine exhaust ☐ Catalyst inlet and outlet temperature ☐ Catalyst inlet and exhaust O_2 conc.
☐ Other operational characteristics as approved by the APCO (specify on attached sheet)

HEALTH RISK ASSESSMENT DATA

Operating Hours

Maximum Operating Schedule: 24 hours per day, and **3710** hours per year

Receptor Data

Distance to nearest Residence	**250-300** feet	Distance is measured from the proposed stack location to the nearest boundary of the nearest apartment, house, dormitory, etc.
Direction to nearest Residence	**South**	Direction from the stack to the receptor, i.e. Northeast or South.
Distance to nearest Business	**1500** feet	Distance is measured from the proposed stack location to the nearest boundary of the nearest office building, factory, store, etc.
Direction to nearest Business	**Northeast**	Direction from the stack to the receptor, i.e. North or Southwest.

Stack Parameters

Release Height	**60** feet above grade
Stack Diameter	**144** inches at point of release
Raincap	☐ Flapper-type ☐ Fixed-type ☒ None ☐ Other: _____
Direction of Flow	☒ Vertically Upward ☐ Horizontal ☐ Other: ____° from vert. or ____° from horiz.

Exhaust Data

Flowrate: **549,000 – 581,000** acfm | Temperature: 775 °F

Facility Location

☐ Urban (area of dense population) ☒ Rural (area of sparse population)

FOR DISTRICT USE ONLY

Date:	FID:	Project:	Public Notice: [ ] Yes [ ] No
Comments:			

Topsøe DENOX Catalysts
DNX-series

Product Specifications
DNX-920

DNX-920 is specially developed for use in installations where the demand to the activity is very high.

The catalyst is of the low dust type with a very high DeNOx activity in combination with a high activity for SO_2 oxidation.

Applications
DNX-920 is normally used for installations operating solely gas. Generally, DNX-920 is used where the demand to the DeNOx efficiency is high and there is no limitations to the SO_2 oxidation.

Physical and Chemical Properties
In the below table, the typical properties for the catalyst are given:

Application	
Dust Particulate Loading	Low
SO_2 Oxidation	High
Physical Properties	
Hydraulic Diameter, mm	2.7
Wall Thickness, mm	0.4
Corresponding Pitch, mm	3.1
Void, %	78
Specific Area, m^2/m^3	1140
Chemical composition, %	
Vanadium Pentoxide	0-4
Tungsten Trioxide	5-10
Titanium Dioxide	80-90
Element A: 0.5 m Catalyst in Height	
Dimensions, H x W x L, mm	572 x 466 x 466
Weight, kg	60
Catalyst Volume, litre	109
Element H: 0.25 m Catalyst in Height	
Dimensions, H x W x L, mm	322 x 466 x 466
Weight, kg	40
Catalyst Volume, litre	55

Camet® catalytic systems

Products

Autocatalyst recycling

Camet® catalytic systems

COCat™ oxidation catalysts

GEN™ diesel oxidation catalyst

PTX™ two-way catalysts

more products

Engelhard's **Camet®** catalytic systems destroy carbon monoxide (CO) and volatile organic compounds (VOCs) produced by power generation equipment.

As power plant emissions have received increased attention by regulators, power generators have been required to meet ever more stringent environmental regulations. **Camet** technology offers an efficient, cost-effective program for gas or oil fired turbines and boilers to meet these regulations.

The technology has been proven effective by millions of hours of trouble-free performance in the field. **Camet**-based catalytic converters have a superior conversion efficiency and low-pressure drop.

The effectiveness of **Camet** catalysts is a direct result of Engelhard's innovative catalytic core over which the exhaust gases are passed. The core consists of a continuous metal foil that is corrugated, coated with a uniform washcoat containing the catalyst, folded and encased in a steel container. The folded foil's unique herringbone and skew patterns produce the needed turbulence to ensure excellent fluid-to-wall contact, leading to superior conversion efficiency per unit volume.

The system provides superior conversion efficiency and enables generators to treat large flow rates of exhaust gas with smaller volumes of highly active catalysts.

The metal foil substrate provides enhanced catalyst durability with reduced weight. It is rugged and washable. The system also performs effectively in a broad range of operating temperatures: from 500°F to 1250°F (260°C to 675°C).

Camet catalytic systems can be customized to meet the needs of new or retrofit installations, even where space is limited. Engelhard can tailor catalyst composition, cell density and catalyst module shape and dimensions to meet specific requirements.

Camet catalysts can be configured in individual modules for manual handling or, to reduce service downtime, in complete panels for mechanical loading. Test cores in each unit enable accurate and simple monitoring of the catalyst's efficiency through the life of the product.

For more information, contact Nancy Ellison

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ENGELHARD

Engelhard Camet® Oxidation Catalysts

- Broad Operating Temperature Window, 500°F to 1250°F
- Patented Continuous on-line Corrugating, Catalyst Coating and Honeycomb Forming Process Manufactures Superior Quality Products
  - ➢ Produces even coating of catalyst materials throughout metal foils. It eliminates uneven coating distribution (axially and around the cell walls) encountered on post-coating products.
  - ➢ Provides longer life with the effective utilization of catalyst materials.
  - ➢ Maintains wider cell opening to minimize blocking and pressure drop
- Herringbone (Figure 1) and Skew (Figure 2) corrugation patterns provide superior conversion efficiency with minimal pressure drop. Foil shown offset to illustrate corrugation pattern
  - ➢ Herringbone – Reduces Power Loss by reducing pressure drop across the catalyst bed (~20% lower pressure drop than parallel flow honeycombs to achieve the same conversion efficiency (Figures 3 & 4)
  - ➢ Skew –Similar performance to Herringbone. Ideal for low pressure drop application.

Camet Corrugation Patterns

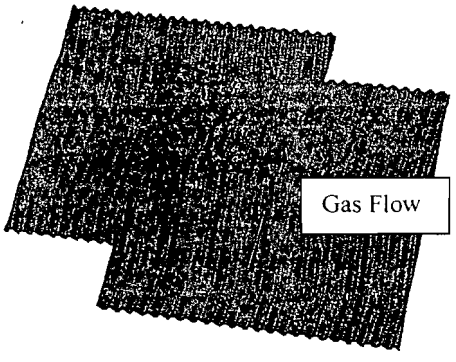


Figure 1. Herringbone Pattern

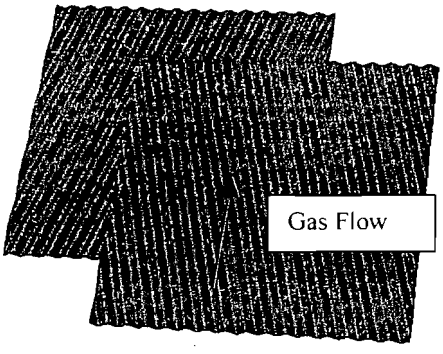


Figure 2. Skew Pattern

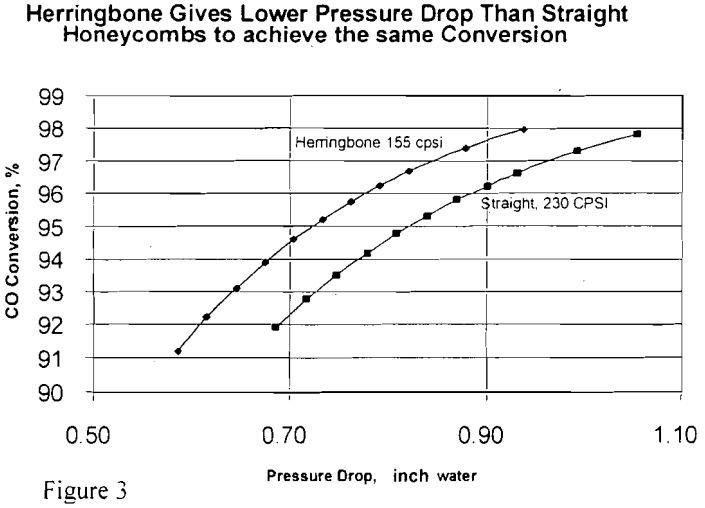


Figure 3

2 mil thickness. 24 ft/s at 650F

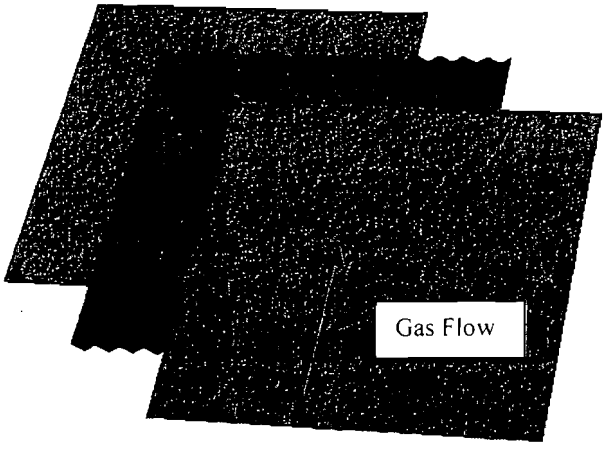


Figure 4.

- Camet catalysts have angled channels (Figures 5 and 6) that create turbulence and a tortuous gas path that promotes mixing
  - ➢ Provides 45% to 50% higher mass transfer rate than the laminar flow that occurs in parallel channel catalysts

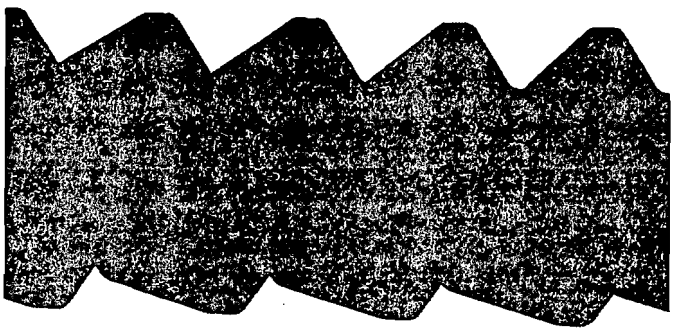


Figure 5. Herringbone

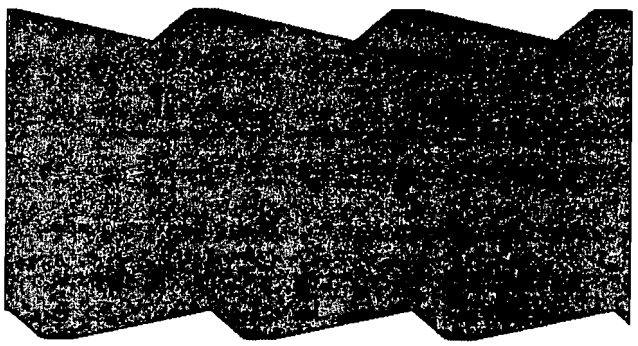


Figure 6. Skew

- Inter-communicating channels enhance gas mixing
  - ➢ Herringbone – Zigzag pattern creates turbulent flow (Figure 7)
  - ➢ Skew – Provides best gas mixing (Figure 8)

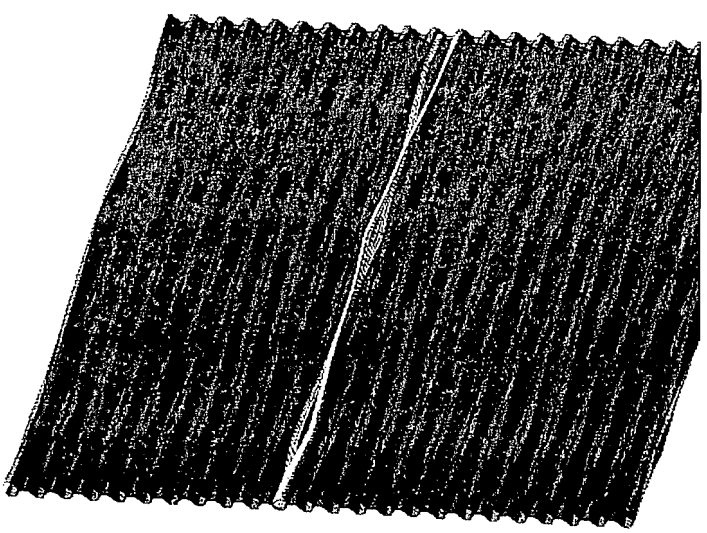


Figure 7. Herringbone Foil with Gas Flow Entering One Channel. 20 Trajectories Shown with Foil Semi-Transparent.

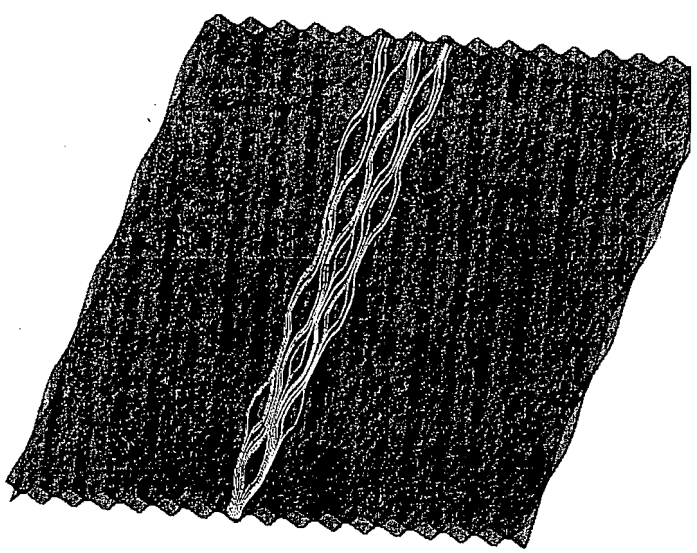


Figure 8. Skew Foil with Gas Flow Entering One Channel. 20 Trajectories Shown with Foil Semi-Transparent

- Interconnecting channels provides great tolerance to surface blockage by particulate, such as lose insulation
  - Resistance to plugging becomes more important as catalyst cell density increases.
  - With Herringbone and Skew patterns, gas flow fills in behind plugged cells (Figure 9 and 10). Catalyst downstream of plug is still active and gas velocity returns to normal levels.
  - With straight channel catalyst. Catalyst downstream of plugged cells is inactive and gas velocity increases. Increases gas velocity reduces catalyst performance.

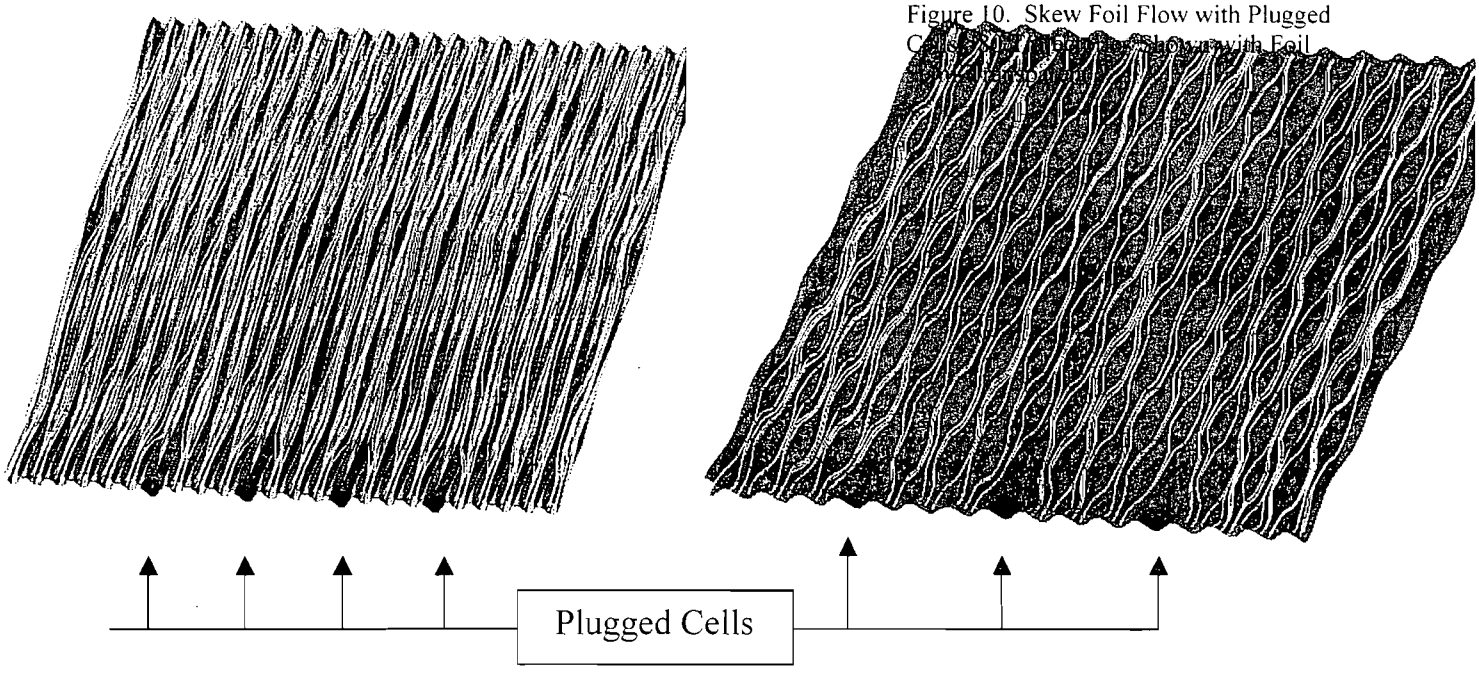


Figure 10. Skew Foil Flow with Plugged Cells [illegible] shown with Foil

- Patented Corrugation patterns for stable and stronger stacking for catalytic abatement applications
  - Rows of White Diamonds (Figure 11 and 12) are contact points between foil layers, which prevent nesting of catalyst.

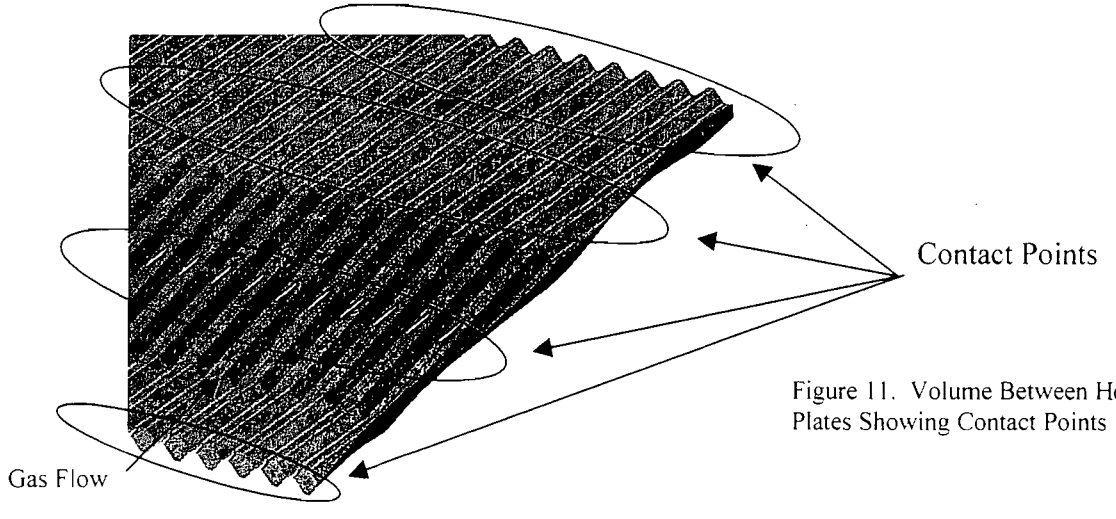


Figure 11. Volume Between Herringbone Plates Showing Contact Points

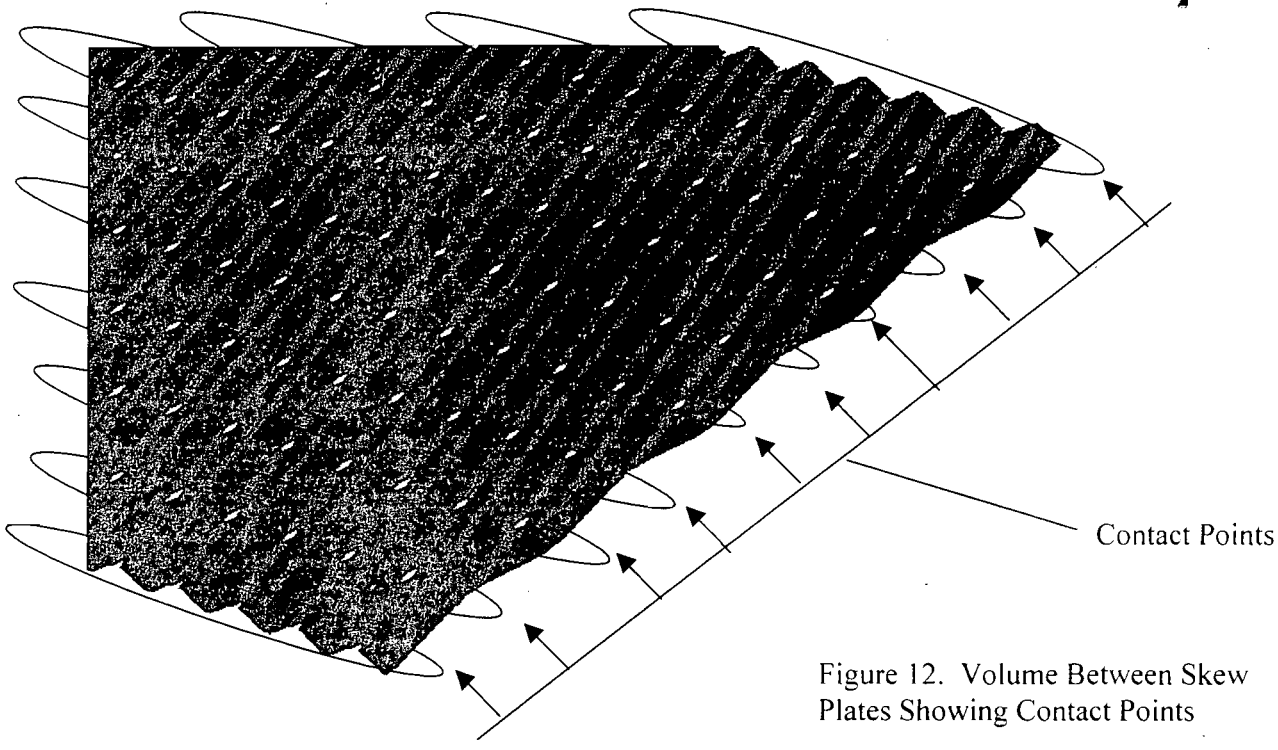


Figure 12. Volume Between Skew Plates Showing Contact Points

- Other Camet Features and Benefits
  - Test cores in each unit to evaluate aging accurately
  - Camet catalysts are washable
  - Catalyst is non-hazardous when spent
  - Precious metal in catalyst can be recovered
  - Light weight metal substrate
  - Easy installation (Figure 13)

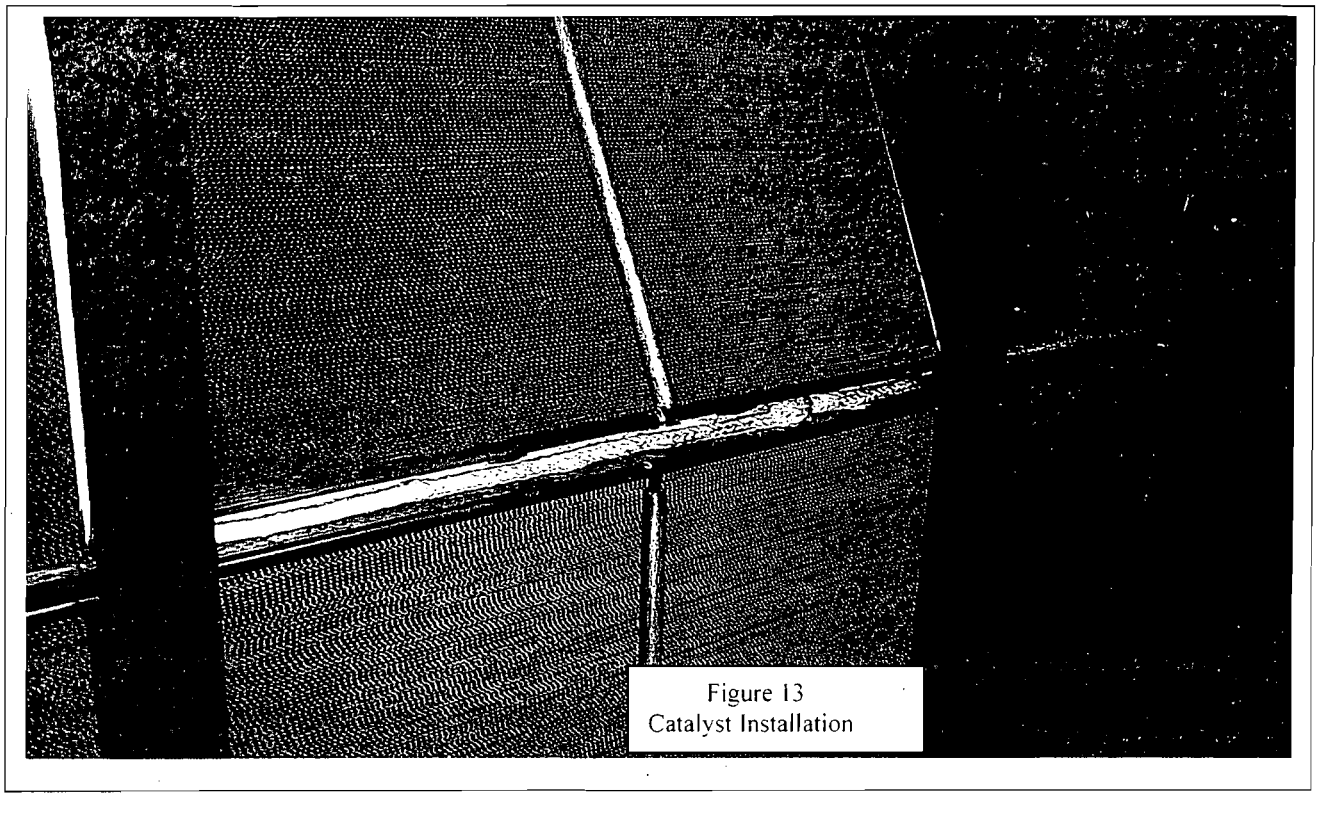


Figure 13
Catalyst Installation

Estimated Average Engine Performance NOT FOR GUARANTEE, REFER TO PROJECT F&ID FOR DESIGN

GE Energy

Performance By: **Grant**
Project Info: **Delano**

Engine: **LM6000 PC-SPRINT and Non Sprint w/ FIGV at -5 Degrees**
Deck Info: **G0125O - 8fk.scp**
Generator: **BDAX 290ERT 60Hz, 13.8kV, 0.9PF (14839)**
Fuel: **Gas Fuel #10-1, 19000 Btu/lb,LHV**

	LM600 PC Sprint	
Case #	**Max Chiller**	**Fogging**
Ambient Conditions		
Dry Bulb, °F	102.0	102.0
Wet Bulb, °F	71.4	71.5
RH, %	22.0	22.0
Altitude, ft	159.1	159.1
Ambient Pressure, psia	14.612	14.612
Engine Inlet		
Comp Inlet Temp, °F	50.0	73.0
RH, %	95.0	93.0
Conditioning	CHILL	EVAP
Tons or kBtu/hr	1343	0
Pressure Losses		
Inlet Loss, inH20	5.00	4.50
Volute Loss, inH20	4.00	4.00
Exhaust Loss, inH20	13.00	13.00
Partload %	**100**	**100**
kW, Gen Terms	**50203**	**46060**
Net kW	**49314**	**45190**
Est. Btu/kW-hr, LHV	**8554**	**8644**
Net Btu/kW-hr, HHV	**9578**	**9690**
Net Guarantee Btu/kW-hr, HHV	**9866**	**9981**
Fuel Flow		
Guarantee Fuel Flow	**487**	**451**
MMBtu/hr, HHV	472	438
MMBtu/hr, LHV	429.4	398.1
lb/hr	22601	20955

Appendix C

Quarterly net emissions change (QNEC)

Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2-BE. But BE = 0 for this new unit. Therefore QNEC = PE2/4, where:
QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
BE = Baseline Emissions (per Rule 2201) for each emissions unit, lb/qtr.

Because the chiller option yields the highest emissions, its emissions will be entered into the District PAS emission profiles.

Chiller option

Maximum Quarterly Post Project Potential to Emit (PE2) - Chiller option						
Quarter	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**	
1st (lb/qtr)	**5,000**	**1,223**	**2,831**	**9,946**	**1,116**	
2nd (lb/qtr)	**5,000**	**1,223**	**2,831**	**9,946**	**1,116**	
3rd (lb/qtr)	**5,000**	**1,223**	**2,831**	**9,946**	**1,116**	
4th (lb/qtr)	**5,000**	**1,223**	**2,831**	**9,946**	**1,116**	

$QNEC = PE2_{annual} \div 4$ quarters/year

NOx = 19,999 lb/year ÷ 4 quarters/year = 5,000 lb/qtr
SOx = 4,891 lb/year ÷ 4 quarters/year = 1,223 lb/qtr
PM_{10} = 11,325 lb/year ÷ 4 quarters/year = 2,831 lb/qtr
CO = 39,783 lb/year ÷ 4 quarters/year = 9,946 lb/qtr
VOC = 4,462 lb/year ÷ 4 quarters/year = 1,116 lb/qtr
(NH3 = 23,337 lb/year ÷ 4 quarters/year = 5,834 lb/qtr)

Fogger option

Maximum Quarterly Post Project Potential to Emit (PE2) - Fogger option						
Quarter	NO_X	SO_X	PM_{10}	CO	VOC	
1st (lb/qtr)	5,000	1,212	2,806	9,946	1,105	
2nd (lb/qtr)	5,000	1,212	2,806	9,946	1,105	
3rd (lb/qtr)	5,000	1,212	2,806	9,946	1,105	
4th (lb/qtr)	5,000	1,212	2,806	9,946	1,105	

QNEC = PE2 ÷ 4 quarters/year

NOx = 19,999 lb/year ÷ 4 quarters/year = 5,000 lb/qtr
SOx = 4,846 lb/year ÷ 4 quarters/year = 1,212 lb/qtr
PM_{10} = 11,222 lb/year ÷ 4 quarters/year = 2,806 lb/qtr
CO = 39,783 lb/year ÷ 4 quarters/year = 9,946 lb/qtr
VOC = 4,421 lb/year ÷ 4 quarters/year = 1,105 lb/qtr

Appendix D

Best Available Control Technology (BACT) guideline

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 3.4.8*

Last Update: 10/1/2002

Gas Turbine - < 50 MW, Uniform Load, Without Heat Recovery

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	6.0 ppmvd** @ 15% O2, based on a three-hour average (Oxidation catalyst, or equal).	90% control efficiency (SCONOx system, or equal).	
NOx	5.0 ppmvd** @ 15% O2, based on a three-hour average (high temp SCR, or equal).	1. 2.5 ppmv @ 15% O2 (SCONOx system, or equal). 2. 3.0 ppmv (Dry Low-NOx combustors and SCR, or equal)	
PM10	Air inlet cooler/filter, lube oil vent coalescer (or equal) and either PUC-regulated natural gas, LPG, or non-PUC-regulated gas with < 0.75 grams S/100 dscf.		
SOx	PUC-regulated natural gas, LPG, or Non-PUC-regulated gas with < 0.75 grams S/100 dscf, or equal.		
VOC	2.0 ppmvd** @ 15% O2, based on a three-hour average (Oxidation catalyst, or equal).	1. 90% control efficiency (SCONOx system, or equal).	

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in s a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is requried for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

***This is a Summary Page for this Class of Source - Permit Specific BACT Determinations on Next Page(s)**

Appendix E

Top-down BACT analysis

Top Down BACT Analysis

1. BACT Applicability:

Pursuant to Sections 4.1.1 and 4.1.2, BACT shall be applied to a new, relocated, or modified emissions unit if the new or relocated unit has a Potential to Emit (PE) exceeding two pounds in any one day or the modified emissions unit results in an Adjusted Increase in Permitted Emissions (AIPE) exceeding 2 lb/day for NO_X, SO_X, PM_{10}, CO, or VOC. For CO emissions, the CO Post-project Stationary Source Potential to Emit (SSPE2) must also exceed 200,000 lb/year to trigger BACT.

As seen in Section VIII.A.1 of this evaluation, the applicant is proposing to install a new emissions unit with PE greater than 2 lb/day for NO_X, SO_X, PM_{10}, CO, and VOC. BACT is triggered for NO_X, SO_X, PM_{10}, and VOC criteria pollutants since the PEs are greater than 2 lbs/day. However, since the SSPE2 for CO is less than 200,000 lbs/year, as demonstrated in Section VII.C.5 of this document, BACT is not triggered for CO.

The PE of ammonia is greater than two pounds per day for the CTG. However, the ammonia emissions are intrinsic to the operation of the SCR system, which is BACT for NO_X. The emissions from a control device that is determined by the District to be BACT are not subject to BACT.

2. BACT Guidance:

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule. The District BACT Clearinghouse includes BACT Guideline (3.4.8) applicable to the combustion turbine generator installation [Gas Turbine < 50 MW, Uniform Load, without Heat Recovery]. (See Appendix D)

3. Top-Down BACT Analysis:

A. NO_X Top-Down BACT Analysis for Permits

According to BACT guideline 3.4.8 (Gas Turbine < to 50 MW, Uniform Load, without Heat Recovery), the following are possible controls for NO_X emissions from similar operations.

Step 1 - <u>Identify All Possible Control Technologies</u>

Based on the previously cited BACT Guideline, general control for NO_X emissions from turbines include the following options:

SJVAPCD BACT Clearinghouse Guideline 3.4.8 identifies achieved in practice BACT as 5.0 ppmvd @ 15% O_2, based on a three-hour average (high temperature SCR, or equal).

SJVAPCD BACT Clearinghouse Guideline 3.4.8 identifies technologically feasible BACT as the following:

1. 2.5 ppmvd @ 15% O_2 ($SCONO_x$ system, or equal)

2. 3.0 ppmvd @ 15% O_2 (Dry Low-NO_x combustors and SCR, or equal)

SJVAPCD BACT Clearinghouse Guideline 3.4.8 does not identify any alternate basic equipment control technologies.

Step 2 - Eliminate Technologically Infeasible Options

All control options listed in step 1 are technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

The following options are ranked based on their emission factor:

Rank	Control Technology	NO_X Emission Factor	Achieved in Practice
1	$SCONO_X$ System or equal	2.5 ppmvd @ 15% O_2	No
2	DLN with SCR or equal	3.0 ppmvd @ 15% O_2	No
3	High Temp SCR or equal	5.0 ppmvd @ 15% O_2	Yes

Step 4 - Cost Effective Analysis

A cost effective analysis must be performed for all control options in the list from step 3 in the order of their ranking to determine the cost effective option with the lowest emissions.

The applicant is proposing the use of a selective catalytic reduction system with water injection for NO_X emissions of 2.5 ppmv @ 15% O_2 (3-hour average). This is the highest ranking technologically feasible option, therefore a cost effective analysis will not be necessary.

Step 5 - Select BACT

BACT for the emission unit is determined to be the use of a Selective Catalytic Reduction system with emissions of less than or equal to 2.5 ppmv @ 15% O_2 (3-hour average). The facility has proposed to use water injection and a Selective Catalytic Reduction system with emissions of less than or equal to 2.5 ppmv @ 15% O_2 (3-hour average); therefore, BACT is satisfied for NOx control.

3. Top-Down BACT Analysis (Continued):

B. SO_X Top-Down BACT Analysis (S-6662-2-0)

According to BACT guideline 3.4.8 (Gas Turbine < 50 MW, Uniform Load, without Heat Recovery), the following are possible controls for SO_X emissions from similar operations.

Step 1 - Identify All Possible Control Technologies

SJVAPCD BACT Clearinghouse Guideline 3.4.8 identifies achieved in practice BACT as the use of PUC-regulated natural gas, LPG, or non-PUC-regulated natural gas with sulfur content less than 0.75 grains/100 dscf.

SJVAPCD BACT Clearinghouse Guideline 3.4.8 does not identify any technologically feasible BACT control technologies.

SJVAPCD BACT Clearinghouse Guideline 3.4.8 does not identify any alternate basic equipment control technologies.

Step 2 - Eliminate Technologically Infeasible Options

All control options listed in step 1 are technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

There is only one option listed.

Step 4 - Cost Effectiveness Analysis

A cost effective analysis must be performed for all control options in the list from step 3 in the order of their ranking to determine the cost effective option with the lowest emissions.

Per the District BACT Policy (APR 1305), Section IX.D, a cost effectiveness analysis is not required for achieved in practice controls. The only control technology alternative in the ranking list from Step 3 has been achieved in practice; therefore a cost effectiveness analysis will not be performed.

Step 5 - Select BACT

The applicant has proposed to use PUC regulated natural gas. Therefore, BACT for this class of source is satisfied.

3. Top-Down BACT Analysis (Continued):

C. PM_{10} Top-Down BACT Analysis for Permits

According to BACT guideline 3.4.8 (Gas Turbine < 50 MW, Uniform Load, without Heat Recovery), the following are possible controls for PM_{10} emissions from similar operations.

Step 1 - Identify All Possible Control Technologies

SJVAPCD BACT Clearinghouse Guideline 3.4.8 identifies achieved in practice BACT as the use of an air inlet cooler/filter, lube oil vent coalescer (or equal) and either PUC-regulated natural gas, LPG, or non-PUC-regulated natural gas with a sulfur content of less than 0.75 grains/100 dscf.

SJVAPCD BACT Clearinghouse Guideline 3.4.8 does not identify any technologically feasible BACT control technologies.

SJVAPCD BACT Clearinghouse Guideline 3.4.8 does not identify any alternate basic equipment control technologies.

Step 2 - Eliminate Technologically Infeasible Options

All control options listed in step 1 are technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Air inlet cooler/filter, lube oil vent coalescer (or equal) and either the use of PUC-regulated natural gas, LPG, or non-PUC-regulated natural gas with a sulfur content of less than 0.75 grains/100 dscf.

Step 4 - Cost Effectiveness Analysis

A cost effective analysis must be performed for all control options in the list from step 3 in the order of their ranking to determine the cost effective option with the lowest emissions.

Per the District BACT Policy (APR 1305), Section IX.D, a cost effectiveness analysis is not required for achieved in practice controls. The only control technology alternative in the ranking list from Step 3 has been achieved in practice; therefore a cost effectiveness analysis will not be performed.

Step 5 - Select BACT

BACT for the emission unit is determined to be the use of an air inlet cooler/filter, lube oil vent coalescer, and either PUC-regulated natural gas, LPG, or non-PUC-regulated natural gas with a sulfur content of less than 0.75 grains/100 dscf. The facility has proposed to use an air inlet cooler/filter, lube oil vent coalescer, and PUC regulated natural gas; therefore, BACT is satisfied for PM_{10}.

3. Top-Down BACT Analysis (Continued):

D. VOC Top-Down BACT Analysis for Permits

According to BACT guideline 3.4.8 (Gas Turbine < 50 MW, Uniform Load, without Heat Recovery), the following are possible controls for VOC emissions from similar operations.

Step 1 - Identify All Possible Control Technologies

SJVAPCD BACT Clearinghouse Guideline 3.4.8 identifies achieved in practice BACT as VOC emissions of 2.0 ppmvd @ 15% O_2, based on a three-hour average (oxidation catalyst, or equal).

SJVAPCD BACT Clearinghouse Guideline 3.4.8 identifies technologically feasible BACT as the use of a 90% efficient control device ($SCONO_x$ system, or equal)

SJVAPCD BACT Clearinghouse Guideline 3.4.8 does not identify any alternate basic equipment control technologies.

Step 2 - Eliminate Technologically Infeasible Options

All control options listed in step 1 are technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. 90% control efficiency ($SCONO_x$ system or equal)
2. 2.0 ppmvd @ 15% O_2 (Oxidation catalyst or equal)

Step 4 - Cost Effectiveness Analysis

A cost effective analysis must be performed for all control options in the list from step 3 in the order of their ranking to determine the cost effective option with the lowest emissions.

The applicant is proposing the use of a control system equal to a SCONOx system (2.5 ppmv NOx). This is the highest ranking technologically feasible option, therefore a cost effective analysis will not be necessary.

Step 5 - Select BACT

BACT for the emission unit is determined to be an oxidation catalyst with VOC emission of 2.0 ppmv @ 15% O_2. The facility has proposed to install an oxidation catalyst with emissions of less than or equal to 2.0 ppmv @ 15% O_2; therefore, BACT is satisfied for VOC.

Appendix F

AQIA and RMR

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Tim Bush, AQE – Permit Services
From:	Suzanne Medina– Technical Services
Date:	October 10, 2005
Facility Name:	Wellhead Power Delano
Location:	County Line Rd & Casey Ave., Delano
Application #(s):	S-6662-1-0
Project #:	1054414

A. RMR SUMMARY

RMR Summary			
Categories	**Type of Unit (Unit 1-0)**	**Project Totals**	**Facility Totals**
Prioritization Score	8.47	8.47	8.47
Acute Hazard Index	0.01	0.01	0.01
Chronic Hazard Index	0.00	0.00	0.00
Maximum Individual Cancer Risk (10^{-6})	3.59E-8	3.59E-8	3.59E-8
T-BACT Required?	**No**		
Special Permit Conditions?	**No**		

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Unit # 1-0

No special conditions are required.

B. RMR REPORT

I. Project Description

Technical Services received a request on October 7, 2005, to perform an Ambient Air Quality Analysis and a Risk Management Review for a 47.6 MW Gas Turbine.

II. Analysis

Technical Services performed a prioritization using the District's HEARTs database. Since the total facility prioritization score was greater than one, a refined health risk assessment was required. Emissions calculated using Ventura County Emission Factors for Turbines was input into the HARP model. ISCST3 was used, with the parameters outlined below and meteorological data for 1990 from Bakersfield to determine the maximum dispersion factor at the nearest residential and business receptors. These dispersion factors were input into the HARP model to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 1-0			
Source Type	Point	**Location Type**	Urban
Stack Height (m)	15.24	**Closest Receptor (m)**	200
Stack Diameter. (m)	0.281	**Type of Receptor**	Business
Stack Exit Velocity (m/s)	28.09	**Max Hours per Year**	3900
Stack Exit Temp. (°K)	685	**Fuel Type**	Natural Gas
Burner Rating (MMBtu/hr)	467		

Technical Services performed modeling for criteria pollutants CO, NOx, SOx and PM_{10}; as well as a RMR. The emission rates used for criteria pollutant modeling were worst case commissioning numbers: 33.4 lb/hr CO, 30.5 lb/hr NOx, 1.35 lb/hr SOx, and 3.08 lb/hr PM_{10}. The engineer supplied the maximum fuel rate for the Gas Turbine used during the analysis.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*
Values are in $\mu g/m^3$

Gas Turbine	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass[1]	X	Pass[1]	X	X
NO_x	Pass[1]	X	X	X	Pass[1]
SO_x	Pass[1]	Pass[1]	X	Pass[1]	Pass[1]
PM_{10}	X	X	X	Pass[1]	Pass[1]

*Results were taken from the attached PSD spreadsheet.
[1]The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk factor associated with the natural gas turbine is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on page 1 of this report must be included for this proposed unit.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

Attachments:

A. RMR request from the project engineer
B. Prioritization score with toxic emissions summary
C. Summary of highest cancer, chronic, and acute risks (PMI/MEI report from HARP)
D. AAQA Values

FOR

WELLHEAD POWER DELANO, LLC
Project # 1054414
Region (S) Facility (6662)

DEVICE NUMBER 1
DEVICE NAME Turbine

CAS NUMBER	POLLUTANT NAME	LBS/YEAR	LBS/HOUR	Emissions and Potency Method Prioritization Scores			Despersion Adjustment Method Prioritization Scores		
				Cancer	CHRONIC	ACUTE	Cancer	CHRONIC	ACUTE
1151	PAHs, total, w/o individ. components reported	3.64E-01	9.34E-05	1.70E-01			1.68E-01		
1210	Xylenes (mixed)	5.26E+01	1.35E-02		7.83E-04	2.30E-04		7.83E-04	2.30E-04
50000	Formaldehyde	1.71E+02	4.39E-02	4.37E-01	5.79E-01	1.75E-01	4.31E-01	5.79E-01	1.75E-01
71432	Benzene	2.06E+01	5.28E-03	2.54E-01	3.48E-03	1.52E-03	2.51E-01	3.48E-03	1.52E-03
75070	Acetaldehyde	6.74E+01	1.73E-02	7.73E-02	7.60E-02		7.64E-02	7.60E-02	
91203	Naphthalene	1.46E+00	3.74E-04	2.11E-02	1.64E-03		2.08E-02	1.64E-03	
100414	Ethyl benzene	2.40E+01	6.16E-03		1.22E-04			1.22E-04	
107028	Acrolein	1.64E+01	4.20E-03		2.77E+00	8.30E+00		2.77E+00	8.30E+00
108883	Toluene	1.32E+02	3.39E-02		4.47E-03	3.44E-04		4.47E-03	3.44E-04
110543	Hexane	3.19E+03	8.17E-01		4.62E-03			4.62E-03	
115071	Propylene	1.92E+03	4.91E-01		6.48E-03			6.48E-03	
	TOTALS FOR DEVICE 1			9.59E-01	3.45E+00	8.47E+00	9.48E-01	3.45E+00	8.47E+00

AAQA for GAS Turbine (S6662)
All Values are in ug/m^3

	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
STCK1	6.406E+00	2.096E-02	9.354E+00	3.159E+00	3.779E-01	2.515E-01	5.247E-02	7.373E-03	1.194E-01	1.680E-02
Background	1.588E+02	4.017E+01	4.777E+03	3.029E+03	7.992E+01	3.996E+01	1.332E+01	5.330E+00	9.500E+01	4.300E+01
Facility Totals	1.652E+02	4.019E+01	4.786E+03	3.032E+03	8.030E+01	4.021E+01	1.337E+01	5.337E+00	9.512E+01	4.302E+01
AAQS	470	100	23000	10000	655	1300	105	80	50	30
	Pass	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**	**Fail**	**Fail**

EPA's Significatance Level (ug/m^3)

NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
0.0	1.0	2000.0	500.0	0.0	25.0	5.0	1.0	5.0	1.0

AAQA Emission (g/sec)

Device	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
STCK1	3.84E+00	2.86E-01	4.21E+00	4.21E+00	1.70E-01	1.70E-01	1.70E-01	7.55E-02	3.87E-01	1.72E-01

Appendix G

California Environmental Quality Act (CEQA)
Notice of Determination (NOD) PSP-05-088 (ZA)

BEFORE THE ZONING ADMINISTRATOR

COUNTY OF TULARE, STATE OF CALIFORNIA

IN THE MATTER OF EXTENSION OF TIME FOR SPECIAL USE PERMIT NO. PSP 05-088 (ZA)	)))	RESOLUTION NO. 2991

Resolution of the Zoning Administrator of the County of Tulare granting a three year extension of time to November 20, 2011, requested by Wellhead Power Delano, LLC, 650 Bercut Drive, Sacramento, CA 95814, for a Special Use Permit which approved the establishment of a public utility structure, consisting of a 49 megawatt gas turbine cogeneration facility to supply electricity to the So. Cal Edison grid on a 2.5-acre portion of a 12.02-acre site in the AE-40 (Exclusive Agricultural-40 acre minimum) Zone, on property located on the north side of County Line Avenue, approximately 1,320 feet west of Road 128, northwest of Delano.

WHEREAS, on November 20, 2006, the applicant was granted Special Use Permit No. PSP 05-088 (ZA) by Decision No. 2798 for the establishment of a public utility structure, consisting of a 49 megawatt gas turbine cogeneration facility to supply electricity to the So. Cal Edison grid on 2.5 acres of a 12.02-acre project site, and

WHEREAS, said Use for which the Special Use Permit was obtained, has not begun, and

WHEREAS, said Use Permit would become null and void after November 20, 2008, unless an extension of time is granted, and

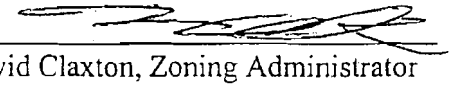
WHEREAS, the applicant, Wellhead Power Delano, LLC, requested in writing on September 9, 2008, a three-year extension of time for said Use Permit, which was timely filed, and

WHEREAS, Staff has recommended that a three-year extension of time would be appropriate, and

WHEREAS, the Zoning Administrator determined, after considering all the evidence presented, that extending the Use Permit for three years would not be detrimental to the health, safety, and general welfare of persons residing or working in the neighborhood or to the general welfare of the County of Tulare.

NOW, THEREFORE, BE IT RESOLVED THAT a three-year extension of time be granted subject to the conditions and limitations set forth under Special Use Permit No. PSP 05-088 (ZA) to November 22, 2011

TULARE COUNTY ZONING ADMINISTRATOR



David Claxton, Zoning Administrator

NOTICE OF DETERMINATION

TO: Tulare County Clerk
Room 105, Courthouse
Visalia, CA 93291

FROM: Tulare Co. Zoning Administrator
5961 S. Mooney Blvd.
Visalia, CA 93277

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resource Code.

Project Title/Case File No. PSP 05-088 (ZA) Applicant: Wellhead Power Delano, LLC, 650 Bercut Drive, Suite C, Sacramento, CA 95814

State Clearinghouse No. (if any): 2006091065

Lead Agency: Tulare County Resource Management Agency

Staff Contact Person: Beverly Cates, Project Planner Telephone Number: 733-6291

Project Location: North side of County Line Avenue, approximately 1320 feet west of Road 128, northwest of Delano

Project Description: Special Use Permit to establish a public utility structure, consisting of a 49 megawatt gas turbine cogeneration facility to supply electricity to the So. Calif. Edison grid on a 2.5 acre portion of a 12.02 acre site in the AE-40 (Exclusive Agricultural – 40 acre minimum) Zone.

This is to advise that the TULARE COUNTY ZONING ADMINISTRATOR has approved the above described project on November 20, 2006. and has made the following determinations regarding the above described project:

1. The project ( ) will (X) will not have a significant effect on the environment.

2. ( ) An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.

   (X) A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.

   The EIR or Negative Declaration and record of project approval may be examined at: 5961 S. Mooney Blvd., Visalia, California 93277

3. Mitigation measures ( ) were, (X) were not, made a condition of the approval of the project.

4. A Statement of Overriding Considerations ( ) was, (X) was not, adopted for the project.

George E. Finney
Tulare County Zoning Administrator

(X) COFE Attached
( ) D.F.& G. Fees Req'd
( ) E.I.R.
( ) N.D.

By: Beverly Cates for
Signature

Filed with the Tulare County Clerk on _____, 20_____

cc: Calif. Fish & Game, 1416 Ninth Street, 12th Floor, Sacramento, CA 95814
Note: Authority cited: Section 21083, Public Resource Code; Reference: Sections 21108, 21152 and 21167, Public Resource Code.

Appendix H

Copy of acid rain application to EPA

United States
Environmental Protection Agency
Acid Rain Program

OMB No. 2060-0258
Approval expires 11/30/2012

Acid Rain Permit Application

For more information, see instructions and 40 CFR 72.30 and 72.31.

This submission is: X new ~ revised ~ for Acid Rain permit renewal

STEP 1

Identify the facility name, State, and plant (ORIS) code.

Facility (Source) Name - **Wellhead Power Delano, LLC**	State - **CA**	Plant Code

STEP 2

Enter the unit ID# for every affected unit at the affected source in column "a."

a	b
Unit ID#	Unit Will Hold Allowances in Accordance with 40 CFR 72.9(c)(1)
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes

Permit Requirements

STEP 3

Read the standard requirements.

(1) The designated representative of each affected source and each affected unit at the source shall:

(i) Submit a complete Acid Rain permit application (including a compliance plan) under 40 CFR part 72 in accordance with the deadlines specified in 40 CFR 72.30; and

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review an Acid Rain permit application and issue or deny an Acid Rain permit;

(2) The owners and operators of each affected source and each affected unit at the source shall:

(i) Operate the unit in compliance with a complete Acid Rain permit application or a superseding Acid Rain permit issued by the permitting authority; and

(ii) Have an Acid Rain Permit.

Monitoring Requirements

(1) The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75.

(2) The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the source or unit, as appropriate, with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.

(3) The requirements of 40 CFR part 75 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Act and other provisions of the operating permit for the source.

Sulfur Dioxide Requirements

(1) The owners and operators of each source and each affected unit at the source shall:

(i) Hold allowances, as of the allowance transfer deadline, in the source's compliance account (after deductions under 40 CFR 73.34(c)), not less than the total annual emissions of sulfur dioxide for the previous calendar year from the affected units at the source; and

(ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide.

(2) Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act.

(3) An affected unit shall be subject to the requirements under paragraph (1) of the sulfur dioxide requirements as follows:

(i) Starting January 1, 2000, an affected unit under 40 CFR 72.6(a)(2); or

(ii) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3).

Sulfur Dioxide Requirements, Cont'd.

STEP 3, Cont'd.

(4) Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.
(5) An allowance shall not be deducted in order to comply with the requirements under paragraph (1) of the sulfur dioxide requirements prior to the calendar year for which the allowance was allocated.
(6) An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.
(7) An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right.

Nitrogen Oxides Requirements

The owners and operators of the source and each affected unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides.

Excess Emissions Requirements

(1) The designated representative of an affected source that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77.
(2) The owners and operators of an affected source that has excess emissions in any calendar year shall:
(i) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR part 77; and
(ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77.

Recordkeeping and Reporting Requirements

(1) Unless otherwise provided, the owners and operators of the source and each affected unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the Administrator or permitting authority:
(i) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;

Recordkeeping and Reporting Requirements, Cont'd.

STEP 3, Cont'd.

(ii) All emissions monitoring information, in accordance with 40 CFR part 75, provided that to the extent that 40 CFR part 75 provides for a 3-year period for recordkeeping, the 3-year period shall apply.
(iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,
(iv) Copies of all documents used to complete an Acid Rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.

(2) The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR part 72 subpart I and 40 CFR part 75.

Liability

(1) Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to section 113(c) of the Act.
(2) Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to section 113(c) of the Act and 18 U.S.C. 1001.
(3) No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.
(4) Each affected source and each affected unit shall meet the requirements of the Acid Rain Program.
(5) Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source.
(6) Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit.
(7) Each violation of a provision of 40 CFR parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act.

Effect on Other Authorities

No provision of the Acid Rain Program, an Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 shall be construed as:
(1) Except as expressly provided in title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Act, including the provisions of title I of the Act relating

Effect on Other Authorities, Cont'd.

to applicable National Ambient Air Quality Standards or State Implementation Plans;

STEP 3, Cont'd.

(2) Limiting the number of allowances a source can hold; *provided,* that the number of allowances held by the source shall not affect the source's obligation to comply with any other provisions of the Act;
(3) Requiring a change of any kind in any State law regulating electric utility rates and charges, affecting any State law regarding such State regulation, or limiting such State regulation, including any prudence review requirements under such State law;
(4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,
(5) Interfering with or impairing any program for competitive bidding for power supply in a State in which such program is established.

Certification

STEP 4
Read the certification statement, sign, and date.

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name **Paul Cummins, Designated Representative**	
Signature 	Date 6/10/10

Instructions for the Acid Rain Program Permit Application

The Acid Rain Program requires the designated representative to submit an Acid Rain permit application for each source with an affected unit. A complete Certificate of Representation must be received by EPA before the permit application is submitted to the title V permitting authority. A complete Acid Rain permit application, once submitted, is binding on the owners and operators of the affected source and is enforceable in the absence of a permit until the title V permitting authority either issues a permit to the source or disapproves the application.

Please type or print. If assistance is needed, contact the title V permitting authority.

STEP 1 A Plant Code is a 4 or 5 digit number assigned by the Department of Energy=s (DOE) Energy Information Administration (EIA) to facilities that generate electricity. For older facilities, "Plant Code" is synonymous with "ORISPL" and "Facility" codes. If the facility generates electricity but no Plant Code has been assigned, or if there is uncertainty regarding what the Plant Code is, contact EIA at (202) 586-4325 or (202) 586-2402.

STEP 2 In column "a," identify each unit at the facility by providing the appropriate unit identification number, consistent with the identifiers used in the Certificate of Representation and with submissions made to DOE and/or EIA. Do not list duct burners. For new units without identification numbers, owners and operators must assign identifiers consistent with EIA and DOE requirements. Each Acid Rain Program submission that includes the unit identification number(s) (e.g., Acid Rain permit applications, monitoring plans, quarterly reports, etc.) should reference those unit identification numbers in exactly the same way that they are referenced on the Certificate of Representation.

Submission Deadlines

For new units, an initial Acid Rain permit application must be submitted to the title V permitting authority 24 months before the date the unit commences operation. Acid Rain permit renewal applications must be submitted at least 6 months in advance of the expiration of the acid rain portion of a title V permit, or such longer time as provided for under the title V permitting authority=s operating permits regulation.

Submission Instructions

Submit this form to the appropriate title V permitting authority. If you have questions regarding this form, contact your local, State, or EPA Regional Acid Rain contact, or call EPA's Acid Rain Hotline at (202) 343-9620.

Paperwork Burden Estimate

The public reporting and record keeping burden for this collection of information is estimated to average 8 hours per response. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW., Washington, D.C. 20460. Include the OMB control number in any correspondence. **Do not send the completed form to this address.**

Appendix I

Commissioning Emissions

Estimated Average Engine Performance NOT FOR GUARANTEE

GE Energy

Performance By: TTINUCCI
Project Info:

Engine: **LM6000 PC-SPRINT w/ VIGV**
Deck Info: **GE125M - 81o.scp**
Generator: **290ERT 60Hz, 13.8kV, 1.0PF (14839)**
Fuel: **Gas Fuel #10-1, 19000 Btu/lb,LHV**

Case #	Min Temp 100	Max T - Evap 101	Max T - Chill 102	Avg - Chill 103	Avg Evap 104	Comments
Ambient Conditions						
Dry Bulb, °F	55.0	105.0	105.0	92.0	92.0	
Wet Bulb, °F	48.0	75.1	75.1	67.2	67.2	
RH, %	60.0	25.0	25.0	27.0	27.0	
Altitude, ft	316.0	316.0	316.0	316.0	316.0	
Ambient Pressure, psia	14.529	14.529	14.529	14.529	14.529	
Engine Inlet						
Comp Inlet Temp, °F	55.0	75.1	52.0	50.0	67.2	
RH, %	60.0	100.0	95.0	95.0	100.0	
Conditioning	NONE	EVAP	CHILL	CHILL	EVAP	
Tons or kBtu/hr	0	0	1537	1038	0	
Pressure Losses						
Inlet Loss, inH20	5.00	4.50	5.00	5.00	4.50	
Volute Loss, inH20	4.00	4.00	4.00	4.00	4.00	
Exhaust Loss, inH20	14.00	14.00	14.00	14.00	14.00	
kW, Gen Terms, Gross	**48958**	**44711**	**49127**	**49501**	**46504**	
KW, Plant Auxiliaries, KW	**833**	**833**	**1909**	**1560**	**833**	
Transformer Loss, 1%	**481**	**439**	**472**	**479**	**457**	
Net Plant Output, KW	**47,644**	**43,439**	**46,746**	**47,462**	**45,214**	
Heat Rate						
MMBtu/hr, HHV (Non-Guaranteed)	463	427	463	467	442	
Guaranteed Fuel Flow, MMBtu/hr (3%)	**476**	**440**	**477**	**481**	**455**	
Guar. Plant Heat Rate Net, Btu/Kw hr	**10,000**	**10,125**	**10,212**	**10,125**	**10,062**	
Fuel Flow						
Est. Btu/kW-hr, LHV CTG Gross	8551	8642	8536	8528	8594	
MMBtu/hr, LHV	418.6	386.4	419.4	422.2	399.7	
lb/hr, LHV	22034	20336	22071	22219	21036	
MMBtu/hr, HHV	463	427	463	467	442	
NOx Control	**Water**	**Water**	**Water**	**Water**	**Water**	
Water Injection						
lb/hr	23167	17717	22623	22939	19706	
Temperature, °F	100.0	100.0	100.0	100.0	100.0	
GPM	46	35	45	46	39	
SPRINT	**LPC**	**LPC**	**LPC**	**LPC**	**LPC**	
lb/hr	5218	6557	4496	4312	5855	
GPM	10	13	9	9	12	
Control Parameters						
HP Speed, RPM	10543	10569	10538	10534	10578	
LP Speed, RPM	3600	3600	3600	3600	3600	
PS3 - CDP, psia	454.2	427.6	455.0	457.3	438.1	
T3CRF - CDT, °F	1001	998	1001	1001	1001	
T48IN, °R	2036	2024	2038	2039	2032	
T48IN, °F	1576	1565	1578	1579	1573	
Exhaust Parameters						
Temperature, °F	828.7	837.9	829.9	829.5	836.7	
lb/sec	295.5	278.2	295.8	297.3	284.7	
lb/hr	1063966	1001533	1064979	1070207	1024992	

Estimated Average Engine Performance NOT FOR GUARANTEE

GE Energy

Performance By: TTINUCCI
Project Info:

Engine: **LM6000 PC-SPRINT w/ VIGV**
Deck Info: **GE125M - 81o.scp**
Generator: **290ERT 60Hz, 13.8kV, 1.0PF (14839)**
Fuel: **Gas Fuel #10-1, 19000 Btu/lb,LHV**

	Min Temp	Max T - Evap	Max T - Chill	Avg - Chill	Avg Evap	
Energy, Btu/s- ref 0 °R	98491	94145	98768	99183	96004	
Cp, Btu/lb-R	0.2763	0.2789	0.2766	0.2765	0.2781	
SCFM (68F)	236,269	223,150	236,644	237,773	228,128	
ACFM	577,313	549,151	578,769	581,347	560,883	
Plant Auxiliaries						
Chiller	0	0	1076	727	0	
FGCompr Suction 350 - 800 psig/680 psig	363	363	363	363	363	
Misc Plant:	131	131	131	131	131	
CTG Pkg:	152	152	152	152	152	
SCR Fans:	188	188	188	188	188	
Total Auxiliaries, KW	833	833	1909	1560	833	
Emissions (NOT FOR USE IN ENVIRONMENTAL PERMITS)						
NOx ppmvd Ref 15% O2	25	25	25	25	25	
NOx as NO2, lb/hr	42	39	42	43	40	
CO ppmvd Ref 15% O2	34	10	29	30	15	
CO, lb/hr	35.35	9.78	29.46	31.23	15.16	
CO2, lb/hr	55948.85	51764.44	56013.86	56373.73	53489.17	
HC ppmvd Ref 15% O2	4	2	3	3	2	
HC, lb/hr	2.25	1.22	1.84	1.96	1.26	
SOX as SO2, lb/hr	0.00	0.00	0.00	0.00	0.00	
PM10, lb/MMBtu	0.0066	0.0066	0.0066	0.0066	0.0066	AP-42
PM10, lb/hr	3.08	3.08	3.08	3.08	3.08	AP-42
SOx, lb/MMBtu	0.0029	0.0029	0.0029	0.0029	0.0029	AP-42
SOx, lb/hr	1.35	1.35	1.35	1.35	1.35	AP-42
Emission Control Technology Efficiencies						
SCR - NOx	90%	90%	90%	90%	90%	Calculated
COR - CO	71%	0%	66%	67%	33%	Calculated
COR - VOC	80%	80%	80%	80%	80%	BACT
Emissions - Controlled						
NOx ppmvd Ref 15% O2	2.5	2.5	2.5	2.5	2.5	Applicant
NOx as NO2, lb/hr	4.30	4.30	4.30	4.30	4.30	Calculated
CO ppmvd Ref 15% O2	10.0	10.0	10.0	10.0	10.0	Applicant
CO, lb/hr	10.47	10.47	10.47	10.47	10.47	Calculated
HC ppmvd Ref 15% O2	2.0	2.0	2.0	2.0	2.0	BACT Spec
HC, lb/hr	1.20	1.20	1.20	1.20	1.20	Calculated
PM10, lb/MMBtu	0.0066	0.0066	0.0066	0.0066	0.0066	AP-42
PM10, lb/hr	3.08	3.08	3.08	3.08	3.08	AP-42
SOx, lb/MMBtu	0.0029	0.0029	0.0029	0.0029	0.0029	AP-42
SOx, lb/hr	1.35	1.35	1.35	1.35	1.35	AP-42
NH3 ppmvd Ref 15% O2	10	10	10	10	10	Applicant
NH3, lb/hr	6.36	6.36	6.36	6.36	6.36	Calculated
Operation Schedule						
Hours per day (Max)	16					Applicant
Hours per day (Startup)	1					Applicant
Hours per day (Shutdown)	1					Applicant
Hours per year (Nominal)	0					Applicant
Hours per year (Startup)	0					Applicant
Hours per year (Shutdown)	0					Applicant

Estimated Average Engine Performance NOT FOR GUARANTEE

GE Energy

Performance By: TTINUCCI
Project Info:

Engine: **LM6000 PC-SPRINT w/ VIGV**
Deck Info: **GE125M - 81o.scp**
Generator: **290ERT 60Hz, 13.8kV, 1.0PF (14839)**
Fuel: **Gas Fuel #10-1, 19000 Btu/lb,LHV**

	Min Temp	Max T - Evap	Max T - Chill	Avg - Chill	Avg Evap
Startup Emissions					
Emissions - Uncontrolled	Value	Basis			
NOx as NO2, lb/hr	40.0	Wellhead Gates			
CO, lb/hr	45.0	Wellhead Gates			
HC, lb/hr	1.2	Baseload			
PM10, lb/hr	2.9	Baseload			
SOx, lb/hr	1.3	Baseload			
NH3, lb/hr	0.0	N/A			
Emissions - Controlled					
NOx as NO2, lb/hr	20.0	Wellhead Gates			
CO, lb/hr	15.0	Wellhead Gates			
HC, lb/hr	1.0	Baseload			
PM10, lb/hr	2.89	Baseload			
SOx, lb/hr	1.27	Baseload			
NH3, lb/hr	2.86	Baseload			
Shutdown Emissions					
Emissions - Uncontrolled	Value	Basis			
NOx as NO2, lb/hr	40.00	Wellhead Gates			
CO, lb/hr	45.00	Wellhead Gates			
HC, lb/hr	1.68	Baseload			
PM10, lb/hr	2.89	Baseload			
SOx, lb/hr	1.27	Baseload			
NH3, lb/hr	0.00	N/A			
Emissions - Controlled					
NOx as NO2, lb/hr	7.00	Wellhead Gates, which is similar to Riverside data			
CO, lb/hr	12.00	Wellhead Gates, which is similar to Riverside data			
HC, lb/hr	1.02	Baseload - similar to Riverside Data			
PM10, lb/hr	2.89	Baseload			
SOx, lb/hr	1.27	Baseload			
NH3, lb/hr	2.86	Baseload			

Exh Wght % Wet (NOT FOR USE IN ENVIRONMENTAL PERMITS)					
AR	1.2262	1.2157	1.2241	1.2245	1.2189
N2	72.0821	71.4607	71.9558	71.9801	71.6537
O2	14.7358	14.6755	14.6963	14.6924	14.6636
CO2	5.2585	5.1685	5.2596	5.2676	5.2185
H20	6.6911	7.4757	6.8585	6.8297	7.2410
SO2	0.0000	0.0000	0.0000	0.0000	0.0000
CO	0.0033	0.0010	0.0028	0.0029	0.0015
HC	0.0002	0.0001	0.0002	0.0002	0.0001
NOX	0.0027	0.0027	0.0027	0.0027	0.0027
Exh Mole % Dry (NOT FOR USE IN ENVIRONMENTAL PERMITS)					
AR	0.9641	0.9638	0.9641	0.9642	0.9640
N2	80.8127	80.7875	80.8181	80.8215	80.8073
O2	14.4636	14.5252	14.4512	14.4430	14.4779
CO2	3.7527	3.7194	3.7604	3.7649	3.7462
H20	0.0000	0.0000	0.0000	0.0000	0.0000
SO2	0.0000	0.0000	0.0000	0.0000	0.0000
CO	0.0037	0.0011	0.0031	0.0033	0.0017
HC	0.0004	0.0002	0.0003	0.0004	0.0002

Estimated Average Engine Performance NOT FOR GUARANTEE

GE Energy

Performance By: TTINUCCI
Project Info:

Engine: **LM6000 PC-SPRINT w/ VIGV**
Deck Info: **GE125M - 81o.scp**
Generator: **290ERT 60Hz, 13.8kV, 1.0PF (14839)**
Fuel: **Gas Fuel #10-1, 19000 Btu/lb,LHV**

	Min Temp	Max T - Evap	Max T - Chill	Avg - Chill	Avg Evap
NOX	0.0027	0.0027	0.0027	0.0027	0.0027
Exh Mole % Wet (NOT FOR USE IN ENVIRONMENTAL PERMITS)					
AR	0.8633	0.8518	0.8610	0.8614	0.8554
N2	72.3705	71.4035	72.1727	72.2105	71.7022
O2	12.9527	12.8380	12.9053	12.9042	12.8465
CO2	3.3607	3.2874	3.3581	3.3638	3.3241
H20	10.4466	11.6157	10.6974	10.6544	11.2678
SO2	0.0000	0.0000	0.0000	0.0000	0.0000
CO	0.0034	0.0010	0.0028	0.0029	0.0015
HC	0.0004	0.0002	0.0003	0.0003	0.0002
NOX	0.0024	0.0024	0.0024	0.0024	0.0024

Aero Energy Fuel Number	**10-1 (GEDEF)**	
	Volume %	**Weight %**
Hydrogen	0.0000	0.0000
Methane	84.5000	71.8447
Ethane	5.5800	8.8924
Ethylene	0.0000	0.0000
Propane	2.0500	4.7909
Propylene	0.0000	0.0000
Butane	0.7800	2.4027
Butylene	0.0000	0.0000
Butadiene	0.0000	0.0000
Pentane	0.1800	0.6883
Cyclopentane	0.0000	0.0000
Hexane	0.1700	0.7764
Heptane	0.0000	0.0000
Carbon Monoxide	0.0000	0.0000
Carbon Dioxide	0.6700	1.5628
Nitrogen	5.9300	8.8044
Water Vapor	0.0000	0.0000
Oxygen	0.1400	0.2374
Hydrogen Sulfide	0.0000	0.0000
Ammonia	0.0000	0.0000

Btu/lb, LHV	19000
Btu/scf, LHV	946
Btu/scf, HHV	1047
Btu/lb, HHV	20996
Fuel Temp, °F	77.0
NOx Scalar	0.998
Specific Gravity	0.65

Engine Exhaust					
Exhaust MW	28.1	28.0	28.1	28.1	28.0
Inlet Flow Wet, pps	285.2	269.3	285.9	287.3	275.3
Inlet Flow Dry, pps	283.7	264.2	283.6	285.2	271.4
Shaft HP	66674	60925	66902	67408	63351
Generator Information					
Capacity kW	65163	50338	50338	54599	54599
Efficiency	0.985	0.984	0.985	0.985	0.984

Estimated Average Engine Performance NOT FOR GUARANTEE

GE Energy

Performance By: TTINUCCI
Project Info:

Engine: **LM6000 PC-SPRINT w/ VIGV**
Deck Info: **GE125M - 81o.scp**
Generator: **290ERT 60Hz, 13.8kV, 1.0PF (14839)**
Fuel: **Gas Fuel #10-1, 19000 Btu/lb,LHV**

	Min Temp	Max T - Evap	Max T - Chill	Avg - Chill	Avg Evap
Inlet Temp, °F	55.0	105.0	105.0	92.0	92.0
Gear Box Loss	N/A	N/A	N/A	N/A	N/A
TRQ48, Torque Limit Cold End	120390	110987	120778	121614	114810
Correct Control Parameters					
PS3JQA, psia	458.763	432.439	460.729	463.058	443.058
XN25R3, rpm	6289	6312	6286	6283	6309
8th Stage Bleed					
Flow, pps	0.0	0.0	0.0	0.0	0.0
Pressure, psia	0.000	0.000	0.000	0.000	0.000
Temperature, °R	0	0	0	0	0
CDP Bleed					
Flow, pps	0.0	0.0	0.0	0.0	0.0
Pressure, psia	0.000	0.000	0.000	0.000	0.000
Est. Gas Pressure at Baseplate, psia	**596.5**	**558.4**	**597.5**	**600.8**	**573.8**
CardPack	**81o**	**81p**	**81p**	**81p**	**81p**
NSI	**305**	**327**	**305**	**305**	**305**
NSI	**0**	**0**	**0**	**0**	**0**
NSI	**0**	**0**	**0**	**0**	**0**

Appendix J

Previously approved ATC

ISSUANCE DATE: 01/23/2007

LEGAL OWNER OR OPERATOR: WELLHEAD POWER DELANO, LLC
MAILING ADDRESS: 650 BERCUT DRIVE, SUITE C
SACRAMENTO, CA 95814

LOCATION: SEC. 32 TWSHP 24S RG 25E
N/O COUNTY LINE RD. E/O CASEY AVE. EXTENSION
DELANO, CA 93215

INSPECT PROGRAM PARTICIPANT: NO

EQUIPMENT DESCRIPTION:
47.6 MW NOMINALLY RATED SIMPLE-CYCLE PEAK-DEMAND POWER GENERATING SYSTEM CONSISTING OF A GENERAL ELECTRIC MODEL LM6000 PC SPRINT NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR WITH WATER SPRAY PREMIXED COMBUSTION SYSTEM, SERVED BY A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM AND AN OXIDATION CATALYST (RENEWED ONE TIME - 1/23/09, SG)

CONDITIONS

1. The permittee shall not begin actual onsite construction of the equipment authorized by this Authority to Construct until the lead agency satisfies the requirements of the California Environmental Quality Act (CEQA). [California Environmental Quality Act]
2. The owner/operator of the Wellhead Power Delano Peaking Plant (WPDPP) shall minimize the emissions from the gas turbine to the maximum extent possible during the commissioning period. Conditions #3 through #13 shall apply only during the commissioning period as defined below. Unless otherwise indicated, Conditions #14 through #57 shall apply after the commissioning period has ended. Conditions #58 through #64 shall apply at all times. [District Rule 2201]
3. Commissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the WPDPP construction contractor to insure safe and reliable steady state operation of the gas turbines and associated electrical delivery systems. [District Rule 2201]
4. Commissioning period shall commence when all mechanical, electrical, and control systems are installed and individual system startup has been completed, or when a gas turbine is first fired, whichever occurs first. The commissioning period shall terminate when the plant has completed initial performance testing, completed final plant tuning, and is available for commercial operation. [District Rule 2201]
5. At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201]
6. At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system and the oxidation catalyst shall be installed, adjusted, and operated to minimize emissions from this unit. [District Rule 2201]
7. Coincident with the steady-state operation of the SCR system and the oxidation catalyst, NOx, CO, and VOC emissions from this unit shall comply with the limits specified in condition #32. [District Rule 2201]
8. The permittee shall submit a plan to the District at least four weeks prior to the first firing of this unit, describing the procedures to be followed during the commissioning period. The plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall include, but not limited to, the tuning of the combustors, the installation and operation of the SCR systems and the oxidation catalyst, the installation, calibration, and testing of the NOx and CO continuous emissions monitors, and any activities requiring the firing of this unit without abatement by the SCR system or oxidation catalyst. [District Rule 2201]
9. Emission rates from this unit, during the commissioning period, shall not exceed any of the following limits: NOx (as NO2) - 30.5 lb/hr or 732.0 lb/day; SOx (as SO2) - 0.53 lb/hr or 12.7 lb/day; PM10 - 3.4 lb/hr or 81.6 lb/day; CO - 33.4 lb/hr or 801.6 lb/day; or VOC (as methane) - 4.8 lb/hr or 115.2 lb/day. [District Rule 2201]

10. During the commissioning period, the permittee shall demonstrate compliance with condition #9 through the use of properly operated and maintained continuous emissions monitors and recorders as specified in condition #11. The monitored parameters for this unit shall be recorded at least once every 15 minutes (excluding normal calibration periods or when the monitored source is not in operation). [District Rule 2201]
11. The continuous emissions monitors specified in this permit shall be installed, calibrated, and operational at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor. After installation, the detection range of the CEMS shall be adjusted as necessary to accurately measure the resulting range of NOx and CO emissions concentrations. [District Rule 2201]
12. The total number of firing hours of this unit without abatement of emissions by the SCR system and the oxidation catalyst shall not exceed 100 hours during the commissioning period. Such operation of this unit without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR system and the oxidation catalyst in place. Upon completion of these activities, the permittee shall provide written notice to the District and the unused balance of the 100 firing hours without abatement shall expire. [District Rule 2201]
13. The total mass emissions of NOx, SOx, PM10, CO, and VOC that are emitted during the commissioning period shall accrue towards the consecutive twelve month emission limits specified in condition #36. [District Rule 2201]
14. The permittee shall notify the District of the date of initiation of construction no later than 30 days after such date, the date of anticipated startup not more than 60 days nor less than 30 days prior to such date, and the date of actual startup within 15 days after such date. [District Rule 4001]
15. A selective catalytic reduction (SCR) system and an oxidation catalyst shall serve the gas turbine engine. Exhaust ducting may be equipped (if required) with a fresh air inlet blower to be used to lower the exhaust temperature prior to inlet of the SCR system catalyst. The permittee shall submit SCR and oxidation catalyst design details to the District at least 30 days prior to commencement of construction. [District Rule 2201]
16. Permittee shall submit continuous emission monitor design, installation, and operational details to the District at least 30 days prior to commencement of construction. [District Rule 2201]
17. Prior to the issuance of the Permit to Operate, the permittee shall submit to the District information correlating the NOx control system operating parameters to the associated measured NOx output. The information must be sufficient to allow the District to determine compliance with the NOx emission limits of this permit when no continuous emission monitoring data for NOx is available or when the continuous emission monitoring system is not operating properly. [District Rule 4703]
18. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
19. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
20. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
21. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
22. Combustion turbine generator (CTG) and electrical generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exhibit opacity of 5% or greater, except for a period or periods not exceeding three minutes in any one hour. [District Rules 2201 and 4101]
23. The turbine shall be equipped with a continuous monitoring system to measure and record hours of operation, mass ratio of water-to-fuel injected and fuel consumption. [District Rules 2201, 4001, and 4703]
24. The exhaust stack shall be equipped with a continuous emissions monitor (CEM) for NOx, CO, and O2. The CEMs shall meet the requirements of 40 CFR part 60, Appendices B and F (for CO), and 40 CFR part 75, Appendices A and B (for NOx and O2) and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [District Rules 1080, 2201, 4001, and 4703]
25. {1833} The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080]

26. {1834} Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080]

27. {1835} The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O2 analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081]

28. The CTG shall be fired exclusively on natural gas with a sulfur content of no greater than 1.0 grain of sulfur compounds (as S) per 100 dry scf of natural gas. [District Rule 2201]

29. During startup periods of thermal stabilization, CTG exhaust emissions shall not exceed any of the following limits: NOx (as NO2) - 20.0 lb/hr, CO - 15 lb/hr, or VOC - 1.0 lb/hr, based on three hour averages. [District Rules 2201 and 4102]

30. During shutdown periods of thermal stabilization, CTG exhaust emissions shall not exceed any of the following limits: NOx (as NO2) - 7.0 lb/hr, CO - 12 lb/hr, or VOC - 1.0 lb/hr, based on three hour averages. [District Rules 2201 and 4102]

31. Thermal Stabilization is defined as the startup or shutdown time during which the exhaust gas is not within the normal operating temperature range, not to exceed two hours per occurrence. Startup/shutdown emissions shall be counted toward all applicable emission limits (lb/day and lb/year). [District Rules 2201 and 4703]

32. Emission rates from this unit, except during thermal stabilization periods, shall not exceed any of the following limits: NOx (as NO2) - 4.3 lb/hr or 2.5 ppmvd @ 15% O2; SOx (as SO2) - 1.35 lb/hr; PM10 - 3.08 lb/hr; CO - 10.47 lb/hr or 10.0 ppmvd @ 15% O2; or VOC (as methane) - 1.2 lb/hr or 2.0 ppmvd @ 15% O2. All emission concentration limits are based on three hour rolling averages. [District Rules 2201, 4001, and 4703]

33. Ammonia (NH3) emissions shall not exceed either of the following limits: 6.54 lb/hr or 10 ppmvd @ 15% O2 (based on a 24 hour rolling average). [District Rules 2201 and 4102]

34. Each one hour period in a three hour rolling average will commence on the hour. The three hour average will be compiled from the three most recent one hour periods. Each one hour period in a twenty-four hour average will commence on the hour. The twenty-four hour average will be calculated starting and ending at twelve-midnight. [District Rule 2201]

35. Emissions from this unit, on days when a startup and/or shutdown occurs, shall not exceed the following: NOx (as NO2) - 121.6 lb/day; SOx (as SO2) - 32.4 lb/day; PM10 - 73.9 lb/day; CO - 257.9 lb/day; or VOC - 28.4 lb/day. [District Rule 2201]

36. Annual emissions from the CTG, calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: NOx (as NO2) - 19,009 lb/year; SOx (as SO2) - 1,656 lb/year; PM10 - 10,618 lb/year; CO - 19,363 lb/year; or VOC - 4,997 lb/year. [District Rule 2201]

37. Daily emissions will be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each month in the twelve consecutive month rolling average emissions shall commence at the beginning of the first day of the month. The twelve consecutive month rolling average emissions to determine compliance with annual emissions limitations shall be compiled from the twelve most recent calendar months. [District Rule 2201]

38. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1) calculate the daily ammonia emissions using the following equation: (ppmvd @ 15% O2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) Utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O2. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation. [District Rule 4102]

39. Source testing to measure startup NOx, CO, and VOC mass emission rates shall be conducted prior to the end of the commissioning period and at least once every seven years thereafter. CEM relative accuracy audit (RAA) shall be determined during startup source testing in accordance with 40 CFR 60, Appendix F. [District Rule 1081]

40. Source testing to measure the NOx, CO, VOC, and NH3 emission rates (lb/hr and ppmvd @ 15% O2) and PM10 emission rate (lb/hr) shall be conducted within 120 days after initial operation and at least once every twelve months thereafter. [District Rules 1081 and 4703]

41. Compliance demonstration (source testing) shall be District witnessed or authorized and samples shall be collected by a certified testing laboratory. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

42. The following test methods shall be used: NOx - EPA Method 7E or 20, PM10 - EPA Method 5 (front half and back half), CO - EPA Method 10 or 10B, O2 - EPA Method 3, 3A, or 20, VOC - EPA Method 18 or 25, ammonia - BAAQMD ST-1B, and fuel gas sulfur content - ASTM D3246. NOx test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rules 1081, 4001, and 4703]

43. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 2201 and 4703]

44. The permittee shall maintain the following records: hours of operation, fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitor measurements, calculated ammonia slip, and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). [District Rules 2201 and 4703]

45. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4703]

46. {1836} Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080]

47. {1837} Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]

48. For the CO CEMs, the owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F, 5.11, at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080]

49. For the NOx and O2 CEMs, the owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 75, Appendix A, at least once every two operating quarters, unless incentive criteria has been met which allows the RATA to be performed once every fourth operating quarter. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 75, Appendix A. [District Rule 1080]

50. Permittee shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100, 6.1]

51. The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the methods utilized to restore normal operations. [District Rule 1100, 7.0]

52. {1839} The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080]
53. Operator shall submit a semiannual report to the APCO listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeded 0.8% by weight. [District Rule 4001]
54. Permittee shall provide notification and recordkeeping as required under 40 CFR, Part 60, Subpart A, 60.7. [District Rule 4001]
55. Permittee shall submit an application to comply with Rule 2520 - Federally Mandated Operating Permits within twelve months of commencing operation. [District Rule 2520]
56. Permittee shall submit an application to comply with Rule 2540 - Acid Rain Program. [District Rule 2540]
57. Disturbances of soil related to any construction, demolition, excavation, extraction, or other earthmoving activities shall comply with the requirements for fugitive dust control in District Rule 8021 unless specifically exempted under Section 4.0 of Rule 8021 (11/15/01) or Rule 8011 (11/15/01). [District Rules 8011 and 8021]
58. An owner/operator shall submit a Dust Control Plan to the APCO prior to the start of any construction activity on any site that will include 10 acres or more of disturbed surface area for residential developments, or 5 acres or more of disturbed surface area for non-residential development, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days. [District Rules 8011 and 8021]
59. Water or chemical/organic stabilizers/suppressants shall be applied when handling bulk materials as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, wind barriers with less than 50% opacity shall also be used. [District Rules 2201, 4101, and 8031]
60. Water or chemical/organic stabilizers/suppressants shall be applied when storing bulk materials as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, all bulk material piles shall also be either maintained with a stabilized surface as defined in Section 3.58 of District Rule 8011, or shall be protected with suitable covers or barriers as prescribed in Table 8031-1, Section B, of District Rule 8031. [District Rules 8011 and 8031]
61. All bulk material transport vehicles shall limit Visible Dust Emissions to 20% opacity by either limiting vehicular speed, maintaining sufficient freeboard on the load, applying water to the top of the load, or covering the load with a tarp or other suitable cover. [District Rules 2201, 4101, 8011, and 8031]
62. Outdoor handling, storage, and transport of any bulk material shall comply with the requirements of SJVUAPCD District Rule 8031 (11/15/01), unless specifically exempted under section 4.0 of Rule 8031. [District Rule 8031]
63. An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041 Section 5.0, unless specifically exempted under Section 4.0 of Rule 8041 (8/19/04) or Rule 8011(8/19/04). [District Rules 8041 and 8011]
64. Whenever open areas are disturbed, or vehicles are used in open areas, the facility shall comply with the requirements of Section 5.0 of District Rule 8051, unless specifically exempted under Section 4.0 of Rule 8051 (11/15/01) or Rule 8011 (11/15/01). [District Rules 8011 and 8051]
65. Any paved road or unpaved road shall comply with the requirements of District Rule 8061 unless specifically exempted under Section 4.0 of Rule 8061 (11/15/01) or Rule 8011 (11/15/01). [District Rules 8011 and 8061]
66. Whenever any portion of the site becomes inactive, Permittee shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in Section 3.58 of District Rule 8011. [District Rules 8071 and 8011]

67. Records and other supporting documention shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8031, 8071, and 8011]

Appendix K

Emissions profile

Permit #: S-6662-2-0	**Last Updated**
Facility: WELLHEAD POWER DELANO, LLC	09/06/2010 BUSSM

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	19999.0	4891.0	11325.0	39783.0	23337.0
Daily Emis. Limit (lb/Day)	141.0	32.4	74.9	265.6	29.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	5000.0	1223.0	2831.0	9946.0	1116.0
Q2:	5000.0	1223.0	2831.0	9946.0	1116.0
Q3:	5000.0	1223.0	2831.0	9946.0	1116.0
Q4:	5000.0	1223.0	2831.0	9946.0	1116.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Appendix L

Draft Authority to Construct

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-6662-2-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: WELLHEAD POWER DELANO, LLC
MAILING ADDRESS: 650 BERCUT DRIVE, SUITE C
SACRAMENTO, CA 95811

LOCATION: SECTION 32, TOWNSHIP 24S, RANGE 25E
N/O COUNTY LINE RD. E/O CASEY AVE. EXTENSION
DELANO, CA 93215

SECTION: 32 **TOWNSHIP:** 24S **RANGE:** 25E

EQUIPMENT DESCRIPTION:
47.6 MW NOMINALLY RATED SIMPLE-CYCLE PEAK-DEMAND POWER GENERATING SYSTEM CONSISTING OF A GENERAL ELECTRIC MODEL LM6000 PC SPRINT NATURAL GAS-FIRED COMBUSTION TURBINE GENERATOR WITH INLET AIR "CHILLER" OR INLET AIR "FOGGER", SERVED BY A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM AND AN OXIDATION CATALYST (CANCELS AND REPLACES S-6662-1)

CONDITIONS

1. Permittee shall submit an application to comply with Rule 2520 - Federally Mandated Operating Permits within twelve months of commencing operation. [District Rule 2520]
2. The owner/operator of the Wellhead Power Delano Peaking Plant (WPDPP) shall minimize the emissions from the gas turbine to the maximum extent possible during the commissioning period. Conditions #3 through #12 shall apply only during the commissioning period as defined below. Except for Regulation 8 requirements, the other conditions on this permit shall apply after the commissioning period has ended. District Regulation 8 fugitive dust rules (8011, 8021, 8031, 8041, 8051 and 8071) apply at all times. [District Rule 2201]
3. Commissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the WPDPP construction contractor to insure safe and reliable steady state operation of the gas turbines and associated electrical delivery systems. [District Rule 2201]
4. Commissioning period shall commence when all mechanical, electrical, and control systems are installed and individual system startup has been completed, or when a gas turbine is first fired, whichever occurs first. The commissioning period shall terminate when the plant has completed initial performance testing, completed final plant tuning, and is available for commercial operation. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-6662-2-0 : Oct 7 2010 10:47AM – BUSSM : Joint Inspection NOT Required

5. At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201]
6. At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system and the oxidation catalyst shall be installed, adjusted, and operated to minimize emissions from this unit. [District Rule 2201]
7. Coincident with the steady-state operation of the SCR system and the oxidation catalyst, NOx, CO, and VOC emissions from this unit shall comply with the steady state emission limits listed in this permit. [District Rule 2201]
8. The permittee shall submit a plan to the District at least four weeks prior to the first firing of this unit, describing the procedures to be followed during the commissioning period. The plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall include, but not limited to, the tuning of the combustors, the installation and operation of the SCR systems and the oxidation catalyst, the installation, calibration, and testing of the NOx and CO continuous emissions monitors, and any activities requiring the firing of this unit without abatement by the SCR system or oxidation catalyst. [District Rule 2201]
9. Emission rates from this unit, during the commissioning period, shall not exceed any of the following limits: NOx (as NO2) - 30.5 lb/hr or 732.0 lb/day; SOx (as SO2) - 0.53 lb/hr or 12.7 lb/day; PM10 - 3.4 lb/hr or 81.6 lb/day; CO - 33.4 lb/hr or 801.6 lb/day; or VOC (as methane) - 4.8 lb/hr or 115.2 lb/day. [District Rule 2201]
10. During the commissioning period, the permittee shall demonstrate compliance with the commissioning emission limits through the use of properly operated and maintained continuous emissions monitors (CEMs) and recorders. The CEMs specified in this permit shall be installed, calibrated, and operational at the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor. After installation, the detection range of the CEMs shall be adjusted as necessary to accurately measure the resulting range of NOx and CO emissions concentrations. The monitored parameters for this unit shall be recorded at least once every 15 minutes (excluding normal calibration periods or when the monitored source is not in operation). [District Rule 2201]
11. The total number of firing hours of this unit without abatement of emissions by the SCR system and the oxidation catalyst shall not exceed 100 hours during the commissioning period. Such operation of this unit without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR system and the oxidation catalyst in place. Upon completion of these activities, the permittee shall provide written notice to the District and the unused balance of the 100 firing hours without abatement shall expire. [District Rule 2201]
12. The total mass emissions of NOx, SOx, PM10, CO, and VOC that are emitted during the commissioning period shall accrue towards the consecutive twelve month emission limits specified in this permit. [District Rule 2201]
13. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
14. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
15. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
16. The permittee shall notify the District of the date of initiation of construction no later than 30 days after such date, the date of anticipated startup not more than 60 days nor less than 30 days prior to such date, and the date of actual startup within 15 days after such date. [District Rule 4001]
17. A selective catalytic reduction (SCR) system and an oxidation catalyst shall serve the gas turbine engine. Exhaust ducting may be equipped (if required) with a fresh air inlet blower to be used to lower the exhaust temperature prior to inlet of the SCR system catalyst. The permittee shall submit SCR and oxidation catalyst design details to the District at least 30 days prior to commencement of construction. [District Rule 2201]
18. Permittee shall submit continuous emission monitor design, installation, and operational details to the District at least 30 days prior to commencement of construction. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

19. Prior to the issuance of the Permit to Operate, the permittee shall submit to the District information correlating the NOx control system operating parameters to the associated measured NOx output. The information must be sufficient to allow the District to determine compliance with the NOx emission limits of this permit when no continuous emission monitoring data for NOx is available or when the continuous emission monitoring system is not operating properly. [District Rule 4703]

20. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]

21. Combustion turbine generator (CTG) and electrical generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exhibit opacity of 5% or greater, except for a period or periods not exceeding three minutes in any one hour. [District Rules 2201 and 4101]

22. The turbine shall be equipped with a continuous monitoring system to measure and record hours of operation, mass ratio of water-to-fuel injected and fuel consumption. [District Rules 2201, 4001 and 4703]

23. The exhaust stack shall be equipped with a continuous emissions monitor (CEM) for NOx, CO, and O2. The CEMs shall meet the requirements of 40 CFR part 60, Appendices B and F (for CO), and 40 CFR part 75, Appendices A and B (for NOx and O2) and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [District Rules 1080, 2201, 4001 and 4703]

24. {1833} The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080]

25. {1834} Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080]

26. {1835} The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O2 analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081]

27. The CTG shall be fired exclusively on PUC regulated natural gas with a sulfur content of no greater than 1.0 grain of sulfur compounds (as S) per 100 dry scf of natural gas. [District Rule 2201]

28. During startup periods (as defined in Rule 4703), CTG exhaust emissions shall not exceed any of the following limits: NOx (as NO2) - 20.0 lb/hr, CO - 15 lb/hr, VOC - 1.21 lb/hr for the chiller system or 1.12 lb/hr for the fogger system, based on three hour averages. [District Rules 2201 and 4102]

29. During shutdown periods (as defined in Rule 4703), CTG exhaust emissions shall not exceed any of the following limits: NOx (as NO2) - 7.0 lb/hr, CO - 12 lb/hr, VOC - 1.21 lb/hr for the chiller system or 1.12 lb/hr for the fogger system, based on three hour averages. [District Rules 2201 and 4102]

30. Startup and shutdown times (as defined in Rule 4703) shall not exceed 2 hours each in any day. Startup/shutdown emissions shall be counted toward all applicable emission limits (lb/day and lb/year). [District Rules 2201 and 4703]

31. Emission rates from this unit, except during startup and shutdown, shall not exceed any of the following limits if the chiller system is installed: NOx (as NO2) - 4.3 lb/hr or 2.5 ppmvd @ 15% O2; SOx (as SO2) - 1.35 lb/hr; PM10 - 3.12 lb/hr; CO - 10.58 lb/hr or 10.0 ppmvd @ 15% O2; or VOC (as methane) - 1.21 lb/hr or 2.0 ppmvd @ 15% O2. Emissions rates, except during startup and shutdown, shall not exceed any of the following if the fogger system is installed: NOx (as NO2) - 4.03 lb/hr or 2.5 ppmvd @ 15% O2; SOx (as SO2) - 1.25 lb/hr; PM10 - 2.89 lb/hr; CO - 9.82 lb/hr or 10.0 ppmvd @ 15% O2; or VOC (as methane) - 1.12 lb/hr or 2.0 ppmvd @ 15% O2. All emission concentration limits are based on three hour rolling averages. [District Rules 2201, 4001 and 4703]

32. Ammonia (NH3) emissions shall not exceed either of the following limits: If chiller system installed: 6.42 lb/hr or 10 ppmvd @ 15% O2 (based on a 24 hour rolling average). If fogger system installed: 5.96 lb/hr or 10 ppmvd @ 15% O2 (based on a 24 hour rolling average). [District Rule 4102]

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33. Each one hour period in a three hour rolling average will commence on the hour. The three hour average will be compiled from the three most recent one hour periods. Each one hour period in a twenty-four hour average will commence on the hour. The twenty-four hour average will be calculated starting and ending at twelve-midnight. [District Rule 2201]

34. Emissions from this unit, on days when a startup and/or shutdown occurs, shall not exceed the following: If chiller option installed, NOx (as NO2) - 141.0 lb/day; SOx (as SO2) - 32.4 lb/day; PM10 - 74.9 lb/day; CO - 265.6 lb/day; or VOC - 29.0 lb/day. If fogger option installed, NOx (as NO2) - 134.6 lb/day; SOx (as SO2) - 30.0 lb/day; PM10 - 69.4 lb/day; CO - 250.4 lb/day; or VOC - 26.9 lb/day [District Rule 2201]

35. Annual baseline fuel use (excludes startup and shutdown periods) shall not exceed 1,498,804 MMBtu/year. Annual emissions from the CTG, calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: If chiller system installed: NOx (as NO2) - 19,999 lb/year; SOx (as SO2) - 4,891 lb/year; PM10 - 11,325 lb/year; CO - 39,783 lb/year; or VOC - 4,462 lb/year. If fogger system installed: NOx (as NO2) - 19,999 lb/year; SOx (as SO2) - 4,846 lb/year; PM10 - 11,222 lb/year; CO - 39,783 lb/year; or VOC - 4,421 lb/year. [District Rule 2201]

36. Daily emissions will be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each month in the twelve consecutive month rolling average emissions shall commence at the beginning of the first day of the month. The twelve consecutive month rolling average emissions to determine compliance with annual emissions limitations shall be compiled from the twelve most recent calendar months. [District Rule 2201]

37. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1) calculate the daily ammonia emissions using the following equation: (ppmvd @ 15% O2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) Utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O2. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation. [District Rule 4102]

38. Source testing to measure startup NOx, CO, and VOC mass emission rates shall be conducted prior to the end of the commissioning period and at least once every seven years thereafter. CEM relative accuracy audit (RAA) shall be determined during startup source testing in accordance with 40 CFR 60, Appendix F. [District Rule 1081]

39. Source testing to measure the NOx, CO, VOC, and NH3 emission rates (lb/hr and ppmvd @ 15% O2) and PM10 emission rate (lb/hr) shall be conducted within 60 days after commissioning period has expired and at least once every twelve months thereafter. [District Rules 1081 and 4703]

40. Compliance demonstration (source testing) shall be District witnessed or authorized and samples shall be collected by a certified testing laboratory. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

41. The following test methods shall be used: NOx - EPA Method 7E or 20, PM10 - EPA Method 5 (front half and back half), CO - EPA Method 10 or 10B, O2 - EPA Method 3, 3A, or 20, VOC - EPA Method 18 or 25, ammonia - BAAQMD ST-1B, and fuel gas sulfur content - ASTM D3246. NOx test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rules 1081, 4001 and 4703]

42. {1836} Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080]

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43. {1837} Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]

44. For the CO CEMs, the owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F, 5.11, at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080]

45. For the NOx and O2 CEMs, the owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 75, Appendix A, at least once every two operating quarters, unless incentive criteria has been met which allows the RATA to be performed once every fourth operating quarter. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 75, Appendix A. [District Rule 1080]

46. Permittee shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100]

47. The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the methods utilized to restore normal operations. [District Rule 1100]

48. {1839} The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess emissions (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080]

49. Disturbances of soil related to any construction, demolition, excavation, extraction, or other earthmoving activities shall comply with the requirements for fugitive dust control in District Rule 8021 unless specifically exempted under Section 4.0 of Rule 8021 or Rule 8011. [District Rules 8011 and 8021]

50. An owner/operator shall submit a Dust Control Plan to the APCO prior to the start of any construction activity on any site that will include 10 acres or more of disturbed surface area for residential developments, or 5 acres or more of disturbed surface area for non-residential development, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days. [District Rules 8011 and 8021]

51. Water or chemical/organic stabilizers/suppressants shall be applied when handling bulk materials as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, wind barriers with less than 50% opacity shall also be used. [District Rules 2201, 4101, and 8031]

52. Water or chemical/organic stabilizers/suppressants shall be applied when storing bulk materials as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, all bulk material piles shall also be either maintained with a stabilized surface as defined in Section 3.58 of District Rule 8011, or shall be protected with suitable covers or barriers as prescribed in Table 8031-1, Section B, of District Rule 8031. [District Rules 8011 and 8031]

53. All bulk material transport vehicles shall limit Visible Dust Emissions to 20% opacity by either limiting vehicular speed, maintaining sufficient freeboard on the load, applying water to the top of the load, or covering the load with a tarp or other suitable cover. [District Rules 2201, 4101, 8011 and 8031]

54. Outdoor handling, storage, and transport of any bulk material shall comply with the requirements of SJVAPCD District Rule 8031, unless specifically exempted under section 4.0 of Rule 8031. [District Rule 8031]

55. An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041 Section 5.0, unless specifically exempted under Section 4.0 of Rule 8041 or Rule 8011. [District Rules 8041 and 8011]

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56. Whenever open areas are disturbed, or vehicles are used in open areas, the facility shall comply with the requirements of Section 5.0 of District Rule 8051, unless specifically exempted under Section 4.0 of Rule 8051 or Rule 8011. [District Rules 8011 and 8051]

57. Any paved road or unpaved road shall comply with the requirements of District Rule 8061 unless specifically exempted under Section 4.0 of Rule 8061 or Rule 8011. [District Rules 8011 and 8061]

58. Whenever any portion of the site becomes inactive, Permittee shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in Section 3.58 of District Rule 8011. [District Rules 8071 and 8011]

59. Operator shall submit a semiannual report to the APCO listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeded 0.8% by weight. [District Rule 4001]

60. Permittee shall provide notification and recordkeeping as required under 40 CFR, Part 60, Subpart A, 60.7. [District Rule 4001]

61. The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 2201 and 4703]

62. The permittee shall maintain the following records: baseline MMBtu of fuel consumed (excludes startup and shutdown periods), total annual MMBtu of fuel consumed, continuous emission monitor measurements, calculated ammonia slip, and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). [District Rules 2201 and 4703]

63. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4703]

64. Records and other supporting documentation shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8031, 8071, and 8011]

65. This ATC cancels and replaces ATC S-6662-1-0. [District Rule 2201]