San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAR 16 2011

Andrew Robertson
Wellhead Power Gates, LLC
650 Bercut Drive, Suite C
Sacramento, CA 95814

Re: Proposed Authority to Construct / Certificate of Conformity (Minor Mod)
District Facility # C-3843
Project # C-1110070

Dear Mr. Robertson:

Enclosed for your review is the District's analysis of your application for Authority to Construct for the facility identified above. You have requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The proposed modification to an existing natural gas-fired turbine is for installing a wet compression system and increasing the maximum heat input of turbine from 436 MMBtu/hr to 442 MMBtu/hr.

After addressing any EPA comments made during the 45-day comment period, the Authority to Construct will be issued to the facility with a Certificate of Conformity. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures
cc: Gurpreet Brar, Permit Services

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
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MAR 16 2011

Gerardo C. Rios, Chief
Permits Office
Air Division
U.S. EPA - Region IX
75 Hawthorne St
San Francisco, CA 94105

Re: **Proposed Authority to Construct / Certificate of Conformity (Minor Mod)**
District Facility # C-3843
Project # C-1110070

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authority to Construct for Wellhead Power Gates, LLC, located at 39950 S Butte in Huron, which has been issued a Title V permit. Wellhead Power Gates, LLC is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. The proposed modification to an existing natural gas-fired turbine is for installing a wet compression system and increasing the maximum heat input of turbine from 436 MMBtu/hr to 442 MMBtu/hr.

Enclosed is the engineering evaluation of this application, a copy of the current Title V permit, and proposed Authority to Construct # C-3843-1-9 with Certificate of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures
cc: Gurpreet Brar, Permit Services

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San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
(Stationary Gas Turbine)

Facility Name:	Wellhead Power Gates, LLC	Date:	February 28, 2011
Mailing Address:	650 Bercut Drive, Suite C	Engineer:	Gurpreet Brar
	Sacramento, CA 95814	Lead Engineer:	Martin Keast
Contact Person:	Andrew Robertson		
Telephone:	(916) 447-5171		
Fax:	(916) 447-7602		
Application #:	C-3843-1-9		
Project #:	C-1110070		
Deemed Complete:	January 21, 2011		

I. Proposal

Wellhead Power Gates, LLC is applying for an Authority to Construct (ATC) for the modification to an existing natural gas-fired turbine, Permit to Operate (PTO) C-3843-1-7 (see Appendix A). The modifications will consist of installing a wet compression system and increase the maximum heat input of the turbine from 436 MMBtu/hr to 442 MMBtu/hr. The increase in the turbine's maximum heat input will result in an increase in the daily emissions and therefore the current NO_X daily emissions limit will be increased. The applicant has also proposed to keep the unit's current annual fuel usage limit as well and the units current SLC.

Wellhead Power Gates, LLC received their Title V Permit on January 7, 2004. This modification can be classified as a Title V minor modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Wellhead Power Gates, LLC must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC issued with this project.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (12/18/08)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 2540	Acid Rain Program (11/19/97)
Rule 4001	New Source Performance Standards (4/14/99)
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 Turbine (9/20/07)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The facility is located at 39950 S. Butte in Huron, 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

Wellhead Power Gates, LLC currently operates a 45.4 MW power plant located near Huron, California, adjacent to a nearby Pacific Gas and Electric substation. This equipment is operated under Permit to Operate (PTO) C-3843-1-7. The existing natural gas-fired simple-cycle gas turbine is used to provide power to California's electricity grid during periods of high electrical demand. Wellhead Power Gates also operates a gas generator set (genset) in the 230 kW range (PTO C-3843-4-1) to produce electricity. The genset is used in place of the gas turbine during periods when electricity demand is much lower than the gas turbine's outputs. Wellhead Power Gates has a Specific Limiting Condition (SLC) plan for all the criteria pollutants emitted by non-emergency equipment.

V. Equipment Listing

Pre-Project Equipment Description:

C-3843-1-7: 45.4 MW GENERAL ELECTRIC LM-6000 NATURAL GAS-FIRED SIMPLE CYCLE GAS TURBINE ENGINE WITH WATER OR STEAM INJECTION, SERVED BY SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM AND OXIDATION CATALYST

ATC Equipment Description:

C-3843-1-9: MODIFICATION OF 45.4 MW GENERAL ELECTRIC LM-6000 NATURAL GAS-FIRED SIMPLE CYCLE GAS TURBINE ENGINE WITH WATER OR STEAM INJECTION, SERVED BY SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM AND OXIDATION CATALYST: INSTALL A WET COMPRESSION SYSTEM AND INCREASE THE MAXIMUM HEAT INPUT OF THE TURBINE FROM 436 MMBTU/HR TO 442 MMBTU/HR

Post Project Equipment Description:

C-3843-1-9: 45.4 MW GENERAL ELECTRIC LM-6000 NATURAL GAS-FIRED SIMPLE CYCLE GAS TURBINE ENGINE WITH WATER OR STEAM INJECTION, SERVED BY SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM AND OXIDATION CATALYST

VI. Emission Control Technology Evaluation

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

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.

The design of the combustor is the most important factor influencing the formation of NO_X. Design parameters controlling air/fuel ratio and the introduction of cooling air into the combustor strongly influence thermal NO_X formation. Thermal NO_X formation is primarily a function of flame temperature and residence time. The extent of fuel/air mixing prior to combustion also affects NO_X formation. Simultaneous mixing and combustion results in localized fuel-rich zones that yield high flame temperatures in which substantial thermal NO_X production takes place.

The gas turbine is currently equipped with water and steam injection to control the formation of thermal NO_X. The emission unit will be equipped with a Selective Catalytic Reduction (SCR) system for post combustion control of NO_X emissions.

Injecting water or steam into a conventional combustor provides a heat sink that effectively reduces peak flame temperature, thereby reducing thermal NO_X formation. This is known as water injection NO_X control.

Wellhead Power Gates is proposing to add a wet compression system, which significantly increases the airflow by cooling the air immediately prior to the compression process. As a result, the gas turbine provides more power especially in hot weather conditions.

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. Ammonia slip will be limited to 10 ppmvd @ 15% O_2.

CO emissions result from an incomplete combustion. CO results when there is insufficient residence time at high temperature or incomplete mixing to complete the final step in fuel carbon oxidation. The oxidation of CO to CO_2 at gas turbine temperatures is a slow reaction compared to most hydrocarbons oxidation reactions. In gas turbines, failure to achieve CO burnout may result from quenching by dilution air. With liquid fuels, this can be aggravated by carryover of larger droplets from the atomizer at the fuel injector. Carbon monoxide emissions are also dependent on the loading of the gas turbine. For example, a gas turbine operating under a full load will experience greater fuel efficiencies, which will reduce the formation of carbon monoxide. The opposite is also true, a gas turbine operating under a light to medium load will experience reduced fuel efficiencies (incomplete combustion), which will increase the formation of carbon monoxide.

Carbon monoxide oxidation catalysts are typically used on turbines to achieve control of CO emissions especially turbines that use steam injection, which can increase the concentrations of CO and unburned hydrocarbons in the exhaust. CO catalysts are also being used to reduce VOC and organic HAPs emissions. The catalyst is usually made of a precious metal such as platinum, palladium, or rhodium. Other formations, such as metal oxides for emission streams containing chlorinated compounds, are also used. The CO catalyst promotes the oxidation of CO and hydrocarbon compounds to carbon dioxide (CO_2) and water (H_2O) as the emission stream passes through the catalyst bed. The oxidation process takes place spontaneously, without the requirement for introducing reactants. The performance of these oxidation catalyst systems n combustion turbines results in 90+ percent control of CO and about 85 to 90 percent control of formaldehyde. Similar emission reductions are expected on other HAP pollutants.

PM_{10} emissions are controlled through the use of PUC-quality natural gas, and an air intake filter house. VOC emissions, CO and SO_X are controlled through the use of an oxidation catalyst and PUC-quality natural gas.

VII. General Calculations

A. Assumptions

- F-factor for natural gas, corrected to 60 °F, is 8,578 dscf/MMBtu.
- Daily emissions are based on 24 hours per day (Applicant's Data).
- Pre-project daily NO_X emissions are limited to 135.0 lb-NO_X/day (Existing Permit).
- Post-project daily NO_X emissions are limited to 136.8 lb-NO_X/day (Per Applicant).
- Annual natural gas usage is limited to 1,547,100 MMBtu/year (Existing Permit).
- Gas Turbine Engines are exclusively fired on PUC regulated natural gas.
- EPA F-Factor for Natural Gas: 8,710 dscf/MMBtu at 68°F, (40 CFR 60).
- Corrected EPA F-Factor for Natural Gas: 8,578 dscf/MMBtu at 60°F.
- Natural Gas Heating Value: 1,000 Btu/scf (AP 42 Section 1.4).
- Pre-project maximum heat input rating for each turbine is 436 MMBtu/hr (project C-1062731).
- Post-project maximum heat input rating for each turbine is 442 MMBtu/hr (Per Applicant).

- All Particulate Matter (PM) is PM_{10} (CARB PM Inventory Weight Fractions, 02/13/86).
- SO_X emissions are based on natural gas with a sulfur content of 1.0 gr S/100 scf.
- SO_X Emission Factors for natural gas combustion are from District Policy APR 1720.
- Grain conversion: 1 pound = 7,000 grains (AP-42-Appendix A-18).

B. Emission Factors

The applicant has not proposed any change to the emission factors of this unit in this project, therefore the pre and post project emission factors will be the same. Emissions factors for the Gas Turbine Engine were taken from project C-1062731 and are listed as follows:

Pollutant	Emission Factors		Source
NO_X	3.5 ppmv @ 15% O_2	0.0129 lb-NO_X/MMBtu	Project #C-1062731
SO_X	1.0 gr/100 scf	0.00285 lb-SO_X/MMBtu	Project #C-1062731
PM_{10}	---	0.0066 lb-PM_{10}/MMBtu	Project #C-1062731
CO	6.0 ppmv @ 15% O_2	0.0134 lb-CO/MMBtu	Project #C-1062731
VOC	2.0 ppmv @ 15% O_2 (as CH_4)	0.0026 lb-VOC/MMBtu	Project #C-1062731
NH_3	10.0 ppmv @ 15% O_2	0.0134 lb-NH_3/MMBtu	Project #C-1062731

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since the maximum annual heat input for the natural gas-fired turbine engine is 1,547,100 MMBtu/year, the Pre-Project Potential to Emit (PE1 is calculated as follows:

$PE1_{NOx}$ = (0.0129 lb/MMBtu) * (436 MMBtu/hr) * (24 hr/day)
= 135.0 lb NO_X/day

= (0.0129 lb/MMBtu) * (1,547,100 MMBtu/year)
= 19,958 lb NO_X/year

$PE1_{SOx}$ = (0.00285 lb/MMBtu) * (436 MMBtu/hr) * (24 hr/day)
= 29.8 lb SO_X/day

= (0.00285 lb/MMBtu) * (1,547,100 MMBtu/year)
= 4,409 lb SO_X/year

$PE1_{PM10}$ = (0.0066 lb/MMBtu) * (436 MMBtu/hr) * (24 hr/day)
= 69.1 lb PM_{10}/day

= (0.0066 lb/MMBtu) * (1,547,100 MMBtu/year)
= 10,211 lb PM_{10}/year

$PE1_{CO}$ = (0.0134 lb/MMBtu) * (436 MMBtu/hr) * (24 hr/day)
= 140.2 lb CO/day

= (0.0134 lb/MMBtu) * (1,547,100 MMBtu/year)
= 20,731 lb CO/year

$PE1_{VOC}$ = (0.0026 lb/MMBtu) * (436 MMBtu/hr) * (24 hr/day)
= 27.2 lb VOC/day

= (0.0026 lb/MMBtu) * (1,547,100 MMBtu/year)
= 4,022 lb VOC/year

$PE1_{NH3}$ = (0.0134 lb/MMBtu) * (436 MMBtu/hr) * (24 hr/day)
= 140.2 lb NH3/day

= (0.0134 lb/MMBtu) * (1,547,100 MMBtu/year)
= 20,731 lb NH3/year

Pre-Project Potential to Emit (PE1) (PTO #C-3843-1-7)		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO_X	135.0	19,958
SO_X	29.8	4,409
PM_{10}	69.1	10,211
CO	140.2	20,731
VOC	27.2	4,022
NH_3	140.2	20,731

2. Post Project Potential to Emit (PE2)

Since the maximum annual heat input for the natural gas-fired turbine engine remains unchanged at 1,547,100 MMBtu/year, the Post-Project Potential to Emit (PE2 is calculated as follows:

$PE2_{NOx}$ = (0.0129 lb/MMBtu) * (442 MMBtu/hr) * (24 hr/day)
= 136.8 lb NO_X/day

= (0.0129 lb/MMBtu) * (1,547,100 MMBtu/year)
= 19,958 lb NO_X/year

$PE2_{SOx}$ = (0.00285 lb/MMBtu) * (442 MMBtu/hr) * (24 hr/day)
= 30.2 lb SO_X/day

= (0.00285 lb/MMBtu) * (1,547,100 MMBtu/year)
= 4,409 lb SO_X/year

$PE2_{PM10}$ = (0.0066 lb/MMBtu) * (442 MMBtu/hr) * (24 hr/day)
= 70.0 lb PM_{10}/day

= (0.0066 lb/MMBtu) * (1,547,100 MMBtu/year)
= 10,211 lb PM_{10}/year

$PE2_{CO}$ = (0.0134 lb/MMBtu) * (442 MMBtu/hr) * (24 hr/day)
= 142.2 lb CO/day

= (0.0134 lb/MMBtu) * (1,547,100 MMBtu/year)
= 20,731 lb CO/year

$PE2_{VOC}$ = (0.0026 lb/MMBtu) * (442 MMBtu/hr) * (24 hr/day)
= 27.6 lb VOC/day

= (0.0026 lb/MMBtu) * (1,547,100 MMBtu/year)
= 4,022 lb VOC/year

$PE2_{NH3}$ = (0.0134 lb/MMBtu) * (442 MMBtu/hr) * (24 hr/day)
= 142.2 lb NH3/day

= (0.0134 lb/MMBtu) * (1,547,100 MMBtu/year)
= 20,731 lb NH3/year

Post-Project Potential to Emit (PE2) (ATC #C-3843-1-9)		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO_X	136.8	19,958
SO_X	30.2	4,409
PM_{10}	70.0	10,211
CO	142.2	20,731
VOC	27.6	4,022
NH_3	142.2	20,731

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.

The Pre-Project Stationary Source Potential to Emit (SSPE1) is obtained from project # C-1062731, as provided in the table given below:

Pre Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
C-3843-1-7*	19,958	4,409	10,211	20,731	4,022
C-3843-4-1*					
Pre Project SSPE (SSPE1)	**19,958**	**4,409**	**10,211**	**20,731**	**4,022**

* The facility has proposed an SLC that includes units C-3843-1 and –4.

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
C-3843-1-9*	19,958	4,409	10,211	20,731	4,022
C-3843-4-1*					
Post Project SSPE (SSPE2)	**19,958**	**4,409**	**10,211**	**20,731**	**4,022**

* The facility has proposed an SLC that includes units C-3843-1 and –4.

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 September 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)	19,958	4,409	10,211	20,731	4,022
Post Project SSPE (SSPE2)	19,958	4,409	10,211	20,731	4,022
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), calculated pursuant to Section 3.22 of District Rule 2201.

As shown in Section VII.C.5 above, the facility is not a Major Source for any pollutant.

Therefore Baseline Emissions (BE) are equal to the Pre-Project Potential to Emit (PE1).

For emissions covered by a SLC:

C-3843-1-9:

BE_{SLC} = Overall Baseline Emission for all emissions units covered by Specific Limiting Condition (SLC), lb/qtr.

PE_{SLC} = Overall Potential Emission for all emissions units covered by Specific Limiting Condition (SLC), lb/qtr.

As shown previously in Section VII.C.5 this facility is not a Major Source for any criteria pollutant. Thus, BE = PE1 for all criteria pollutants. Since units C-3843-1 and -4 are covered by SLC's, BE_{SLC} = $PE1_{SLC}$ for all criteria pollutants. The proposed unit C-3843-1 is an existing emissions unit at the facility, the BE_{SLC} will be equal to the PE1 from unit C-3843-1.

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 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.*"

As discussed in Section VII.C.5 above, the facility is not a Major Source for NOx, SOx, PM10 and VOC emissions; therefore, the project does not constitute a SB 288 Major Modification for NOx, SOx, PM10 and VOC emissions.

8. Federal Major Modification

District Rule 2201, Section 3.17 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

As discussed in Section VII.C.5 above, the facility is not a Major Source for NOx, SOx, PM10 and VOC emissions; therefore, the project does not constitute a Federal Major Modification for NOx, SOx, PM10 and VOC emissions.

9. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix D.

VIII. Compliance

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 exceeding 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 a 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 discussed in Section I above, there are no new emissions units associated with this project; therefore BACT for new units with PE > 2 lb/day purposes is not triggered.

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.

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

AIPE = PE2 – HAPE

Where,
AIPE = Adjusted Increase in Permitted Emissions, (lb/day)
PE2 = Post-Project Potential to Emit, (lb/day)
HAPE = Historically Adjusted Potential to Emit, (lb/day)

HAPE = PE1 x (EF2/EF1)

Where,
PE1 = The emissions unit's Potential to Emit prior to modification or relocation, (lb/day)
EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1
EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

AIPE = PE2 – (PE1 * (EF2 / EF1))

C-3843-1-9:

AIPE Calculations					
Pollutant	**PE2**	**PE1**	**EF2/EF1**	**AIPE**	**BACT Triggered?**
NO_X	136.8	135.0	1	1.8	No
SO_X	30.2	29.8	1	0.4	No
PM_{10}	70.0	69.1	1	0.9	No
CO	142.1	140.2	1	1.9	No
VOC	27.6	27.2	1	0.4	No

As demonstrated above, the AIPE is not greater than 2.0 lb/day for any of the emissions from the turbine; therefore BACT is not triggered.

d. Major Modification

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

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 of 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)	19,958	4,409	10,211	20,731	4,022
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 greater than the offset thresholds for all the pollutants; therefore offset calculations are not necessary and offsets will not be required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:
a. Any new Major Source, which is a new facility that is also a Major Source,
b. Major Modifications,
c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
d. Any project which results in the offset thresholds being surpassed, and/or
e. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Source

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

b. Major Modification

As demonstrated in VII.C.7, this project does not constitute a Major Modification; therefore, public noticing for Major Modification purposes is not required.

c. PE > 100 lb/day

Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units associated with this project; therefore public noticing is not required for this project for Potential to Emit Purposes.

d. 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	19,958	19,958	20,000 lb/year	No
SO_X	4,409	4,409	54,750 lb/year	No
PM_{10}	10,211	10,211	29,200 lb/year	No
CO	20,731	20,731	200,000 lb/year	No
VOC	4,022	4,022	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.

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 in the following table:

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	19,958	19,958	0	20,000 lb/year	No
SO_x	4,409	4,409	0	20,000 lb/year	No
PM_{10}	10,211	10,211	0	20,000 lb/year	No
CO	20,731	20,731	0	20,000 lb/year	No
VOC	4,022	4,022	0	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

2. Public Notice Action

As discussed above, this project will not result in emissions, for any pollutant, which would subject the project to any of the noticing requirements listed above.

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.

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- This unit shall be fired exclusively on natural gas as defined in 40 CFR 60.331(u) which has a total sulfur content of less than or equal to 1.0 gr/100 scf. [40 CFR 60.333(b), District Rule 4201 and Fresno County Rule 406]

- Daily NO_X emissions from the natural gas-fired turbine engine shall not exceed 136.8 lb-NO_X/day, measured on a 24 hour rolling period. [District Rule 2201]

- Maximum annual heat input for the natural gas-fired turbine engine shall not exceed 1,547,100 MMBtu/year, measured on a calendar year period. [District Rule 2201]

- Except during periods of startup and shutdown, emission rates from the natural gas-fired turbine engine shall not exceed any of the following limits: 5.7 lb-NOx/hour (as NO2) equivalent to 3.5 ppmvd @ 15% O2, 1.26 lb-SOx/hour (as SO2), 2.92 lb-PM10/hour, 5.92 lb-CO/hour equivalent to 6.0 ppmvd @ 15% O2, 1.15 lb-VOC/hour (as methane) equivalent to 2.0 ppmv @ 15% O2, or 10 ppmv ammonia @ 15% O2. All emission limits are based on one hour rolling averages. [District Rules 2201, 4001, and 4703, 5.1.2 & 5.2]

The hourly limits given in above condition are calculated as follows:

NO_X (lb/hr) = 442 MMBtu/hr x 0.0129 MMBtu/hr = **5.7 lb-NOx/hr**
SO_X (lb/hr) = 442 MMBtu/hr x 0.00285 MMBtu/hr = **1.26 lb-SO_X/hr**
PM_{10} (lb/hr) = 442 MMBtu/hr x 0.0066 MMBtu/hr = **2.92 lb-PM_{10}/hr**
CO (lb/hr) = 442 MMBtu/hr x 0.0134 MMBtu/hr = **5.92 lb-CO/hr**
VOC (lb/hr) = 442 MMBtu/hr x 0.0026 MMBtu/hr = **1.15 lb-VOC/hr**

Start up or shut down time of gas turbine engines are designated as Transitional Operation Period and specific conditions regarding Daily Emissions Limits (DELs) during as Transitional Operation Period will be listed on ATC as follows:

- During periods of startup and shutdown, emission rates from the natural gas-fired turbine engine shall not exceed any of the following limits: 20 lb-NOx/hour (as NO2), 1.26 lb-SOx/hour (as SO2), 2.92 lb-PM10/hour, 5.92 lb-CO/hour, or 1.15 lb-VOC/hour (as methane), based on one (1) hour averages. [District Rules 2201, 4001, and 4703, 5.3]

- Startup shall be defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operations. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rule 4703, 3.26, 3.29 and 5.3]

E. Compliance Assurance

1. Source Testing

Source testing to measure PM_{10}, NO_X (as NO_2), VOC, CO, ammonia and fuel gas sulfur content requirements of the Permit to Operate shall be conducted at least once every twelve months. The following conditions will be placed on the proposed ATC:

- Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(b x c/1,000,000)) x 1,000,000/b), where a = ammonia injection rate (lb/hr)/17 (lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/29 (lb/lb. mol), and c = change in measured NOx concentration ppmv at 15% O2 across catalyst. [District Rule 4102]

- Compliance testing to demonstrate compliance with the PM10, NOx (as NO2), VOC, CO, ammonia emission limits, and fuel gas sulfur content requirements of this permit shall be conducted at least once every twelve months. [District Rules 2201, 4001, and 4703, 6.3.1]

- Compliance testing shall be District witnessed, or authorized and samples shall be collected by a California Air Resources Board 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 owner or operator shall provide source test information annually regarding the exhaust gas NOx and CO concentration corrected to 15% O2 (dry). The following test methods shall be used PM10: EPA Method 5 (front half and back half), NOx: EPA Method 7E or 20, 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. Alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, and 4703, 6.4]

2. Monitoring

Pursuant to the current operating permit, the power generation operation shall be equipped with a continuous monitoring system to measure and record hours of operation and fuel consumption, NO_X (before and after SCR system), CO, and O_2.

The CEM shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. 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 NO_X, CO, and O_2 analyzer during District inspections.

In addition, the 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.

Further, a monitoring condition will be added to require the permittee CEM system to be compatible with District's CEM data polling software system and to make CEM data available to the District's automated polling system on a daily basis.

The following conditions will be placed on the proposed ATC:

- The owner or operator shall install, certify, maintain, operate and quality-assure a Continuous Emission Monitoring System (CEMS) which continuously measures and records the exhaust gas NOx and O2 concentrations. The CEM shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [40 CFR 60.334(b) and District Rule 4703, 6.2.1]

- The CEMS shall be linked to a data logger which is compatible with the District's Data acquisition system. 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, 7.1]

3. Recordkeeping

Pursuant to the current operating permit, 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, hours of operation, fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitor measurements, and calculated NO_X mass emission rates (lb/hr).

The following conditions will be placed on the proposed ATC:

- The permittee shall maintain the following records: fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitor measurements, and calculated NOx mass emission rates (lb/hr). [District Rules 2201 and 4703, 6.2]

- The owner or operator shall maintain a stationary gas turbine system 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. [District Rule 4703, 6.2.6]

- The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), and emission measurements. [40 CFR 60.7(b) and District Rule 1080, 7.0; 2201 and 4703, 6.2.1 and 6.2.8

- The owners and operators of the each affected unit at the source shall keep on site the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority: (i) The certificate of representation for the designated representative for 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 beyond such five-year period until such documents are superceded because of the submission of a new certificate of representation changing the designated representative. [40 CFR 72]

- The owners and operators of each affected unit at the source shall keep on site each of the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority; (ii) All emissions monitoring information, in accordance with 40 CFR part 75; (iii) Copies of all reports, compliance certifications and other submissions and all records made or required under the Acid Rain Program; (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission that demonstrates compliance with the requirements of the Acid Rain Program. [40 CFR 75]

4. Reporting

Pursuant to the current operating permit, the following condition will be listed on ATC as follows:

- 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 75 Subpart I. [40 CFR 75]

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit pursuant to Section 3.20 of this rule:

In accordance with Rule 2520, 3.20, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;

4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
    a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
    b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

As discussed above, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with minor modification, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility may operate under the ATC upon submittal of the the Title V minor modification application.

District Rule 2540 Acid Rain Program

The power generating operation is subject to the acid rain program as a phase II unit, i.e. it was 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 later of 1/1/2000 or the date the unit expects to generate electricity. The facility will be required to submit an acid rain program application for the original project. Therefore, pursuant to the current operating permit, the permittee shall submit an application to comply with Rule 2540 - Acid Rain Program.

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.

Therefore, compliance with District Rule 2540 requirements is expected.

Rule 4001 New Source Performance Standards (NSPS)

40 CFR Part 60 Subpart GG – Standards of Performance for Stationary Gas Turbines

Based on the conditions in Permits to Operate, each gas turbine engine is subject to the requirements of this subpart. These requirements and their compliance determination are briefly discussed in the following section.

§60.332 Standard for NOx:

§60.332(a) requires that the 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 at 15% O_2) 1 hour average = 0.0075x (14.4 /Y) + F

Where: Y = manufacturer's rated heat load (kJ/W-hr)
F = amount of fuel bound nitrogen

Therefore:

Y = 13,500 Btu/kW-hr) x (kW/1,000 W) x (1,054.2 J/Btu) x (kJ/1,000J)

Y = 14.2 kJ/W-hr

F= 0 (for natural gas)

Thus:

NO_X (% vol at 15% O_2) 1 hour average = 0.0075 x (14.4 / 14.2) + 0

NO_X (% vol at 15% O_2) 1 hour average = 0.0075% = 75 ppmv @ 15% O_2

The applicant is proposing a NO_X limit of 3.5 ppmv @ 15% O_2, therefore compliance with NSPS NO_X standard is expected.

§60.333 Standard for SOx:

Subpart GG also contains a SO_X standard, which limits fuel sulfur content to less than or equal to 150 ppmv SO_2 and 0.8% by weight. The permit unit has been permitted with a SOx emission rate of 0.00285 lb/MMBtu, which is less than 0.689 lb/MMBtu (0.8 lb-S/100 lb-fuel x 64 lb-SO_2/32 lb-S x 0.0439 lb-fuel/ft^3 x ft3/1,020 Btu x 10^6 Btu/MMBtu), therefore compliance with NSPS SO_X standard is expected.

§60.334 Monitoring of Operations

§60.334(a) requires the owner/operator of any stationary gas turbine using water injection to control NO_X to install and operate a continuous monitoring system to monitor and record fuel consumption and ratio to water to fuel fired. Since the applicant is proposing an option that would allow the turbine to be equipped with water injection, a continuous monitoring system is required.

§60.334(b) states that the owner or operator of a stationary gas turbine constructed between October 3, 1977 and July 8, 2004 and using water or steam to control NOx emissions may, as an alternative to operating the continuous emissions monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine, can install, calibrate, certify, maintain, operate, and quality-assure a continuous monitoring system (CEMS) consisting of NOx and O_2 monitors.

This turbine was constructed between October 3, 1977 and July 8, 2004. Wellhead Power Gates, LLC uses CEMS to measure NOx, CO and O_2 concentrations. The following conditions will be placed on the proposed ATC:

- The owner or operator shall install, certify, maintain, operate and quality-assure a Continuous Emission Monitoring System (CEMS) which continuously measures and records the exhaust gas NOx and O2 concentrations. The CEM shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [40 CFR 60.334(b) and District Rule 4703, 6.2.1]

- The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour or shall meet equivalent specifications established by mutual agreement of the District, the CARB and the EPA. [District Rule 1080 and 40 CFR 60.334(b)(2)]

- The NO_X, CO and O_2 CEMS shall meet the requirements in 40 CFR 60, Appendix F Procedure 1 and Part 60, Appendix B Performance Specification 2 (PS 2), or shall meet equivalent specifications established by mutual agreement of the District, the CARB, and the EPA. [District Rule 1080 and 40 CFR 60.334(b)(1)]

§60.334(h)(3)(i) and (ii) requires the owner or operator to keep sulfur content records using valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum sulfur content of the fuel is 20 grains/100 scf or less or perform a *representative fuel sampling* to show the sulfur content of gaseous fuel does not exceed 20 grains/100 scf. This unit will be fired exclusively on natural gas with total sulfur content of less than or equal to 1.0 gr/100 scf, therefore compliance with sulfur content is expected. The following condition will be placed on the proposed ATC:

- The sulfur content of each fuel source shall be documented in a valid purchase contract, a supplier certification, a tariff sheet, or a transportation contract. [40 CFR 60.334(h)(3) and District Rule 2520, 9.3.2]

§60.334(j)(1)(iii)(A) defines excess NOx emissions shall be any unit-operating hour in which the 4-hour rolling average NOx concentration exceeds the NOx emission limit calculated in §60.332. The following condition will be placed on the proposed ATC:

- 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 O2 (or both). [40 CFR 60.334(J)(1)(iii)]

§60.334(j)(5) requires the owner or operator to postmarked the reports required under §60.7(c) by the 30th day following the end of each 6-month period. The permittee is required to submit quarterly reports. Thus, compliance is expected with this section.

- Operators of CEM systems installed at the direction of the APCO shall submit a written report 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 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. [40 CFR 60.334(j), (j)(5) and District Rule 1080, 8.0]

§60.335 Test Methods and Procedure

§60.335(a) states that the owner or operator shall conduct the performance tests required in §60.8 using EPA Method 20, ASTM D6522-00 or EPA Method 7E and either EPA Method 3 or 3A to determine NOx and diluent concentration. Sampling traverse points are to be selected following Method 20 or Method 1.

§60.335(b)(1) states that for each run of the performance test, the mean nitrogen oxide emission concentration @ 15% O_2 shall be corrected to ISO standard conditions using the equation listed in this section to demonstrate compliance with NSPS NOx standard.

The following condition will be placed on the proposed ATC:

- The following test methods shall be used: NOx - EPA Method 7E or 20; CO - EPA Method 10 or 10B; VOC - EPA Method 18 or 25; PM10 - EPA Method 5 (front half and back half); ammonia - BAAQMD ST-1B; O2 - EPA Method 3, 3A, or 20; and fuel gas sulfur content: ASTM D3246. NOx test results shall be corrected to ISO standard conditions as defined in 40 CFR 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. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335(a), and 40 CFR 60.335(b)(1)]

§60.335(b)(10)(ii) states that an owner or operator is required to determine the sulfur content of the fuel combusted in the turbine then a minimum of three fuel samples shall be collected during the performance test. The following conditions will be placed on the proposed ATC:

- If the unit is not fired on PUC-regulated natural gas, the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM D1072-80, 90 (Reapproved 1994); D3246-81, 92, 96; D4468-85 (Reapproved 2000); or D6667-01. [40 CFR 60.335(10)(ii)]

Compliance is expected with this Rule.

Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, since the operation in this project is not a major source for HAPs, no subparts of 40 CFR Part 61 or 40 CFR Part 63 applies to this operation.

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 which is as dark as or darker than Ringelmann 1 (or 20% opacity). As the turbine is fired solely on natural gas, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. The following condition will be added to the ATC to assure compliance with this rule.

- {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]

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.

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.

An HRA is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project (Appendix C), the total facility prioritization score including this project was less than or equal to one. Therefore, no future analysis is required to determine the impact from this project and compliance with the District's Risk Management Policy is expected.

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.

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.

PM_{10} Emission Factor: 0.0066 lb-PM_{10}/MMBtu
Percentage of PM as PM_{10} in Exhaust: 100%
Exhaust Oxygen (O_2) Concentration: 3%

Excess Air Correction to F Factor = $\frac{20.9}{(20.9 - 3)} = 1.17$

Therefore for each natural gas-fired turbine engine, the Particulate Matter Concentration is calculated as follows:

$$\left(\frac{0.0066\ lb-PM_{10}}{MMBtu} \times \frac{7{,}000\ grain}{lb}\right) / \left(\frac{8{,}578\ ft^3}{MMBtu} \times\ 1.17\right) = 0.0046\ \frac{grain}{dscf}$$

$$0.0046\ grain/dscf < 0.1\ grain/dscf$$

Therefore, compliance with District Rule 4201 requirements is expected.

The following condition will be added to the permit to assure compliance with this rule.

- {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO_2, NO_2, and combustion contaminants (defined as total PM in Rule 1020). This rule also limits combustion contaminants to ≤ 0.1 gr/scf. According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 μm in diameter.

District Rule 4301 Limits			
Pollutant	**NO_2**	**Total PM**	**SO_2**
ATC #C-3843-1-9 (lb/hr)	5.7	2.9	1.3
Rule Limit (lb/hr)	140	10	200

The above table indicates compliance with the maximum lb/hr emissions in this rule; therefore, compliance is expected. The DEL condition on the permits will assure compliance with this rule.

District Rule 4703 Stationary Gas Turbines

The purpose of this rule is to limit oxides of nitrogen (NOx) emissions from stationary gas turbine systems. Pursuant to Section 2.0, the provisions of this rule apply to all stationary gas turbine systems, which are subject to District permitting requirements, and with ratings equal to or greater than 0.3 megawatt (MW) or a maximum heat input rating of more than 3,000,000 Btu per hour, except as provided in Section 4.0.

Section 5.1 requires that NO_x emissions concentrations measured for compliance with Section 5.0 shall be averaged, using consecutive 15-minute sampling periods, over a three hour period in accordance with either the applicable test method in Section 6.4, or, if continuous emission monitors are used, all applicable requirements of 40 CFR Part 60, as detailed in Section 6.2. Any variations from these measurement requirements are subject to APCO and EPA approval prior to implementation.

Section 5.1.1 requires that the owner or operator of any stationary gas turbine system shall not operate such unit under load conditions, except as allowed by Section 5.3, which results in the measured emissions concentration exceeding the applicable emission limits below, according to the Tier 1 Compliance Schedules listed in Section 7.0.

Rule 4703 Tier 1 Gas Turbine NO_x Emission Limits		
Turbine Rating (MW)	**Operation (hrs/yr)**	**NO_x Emission Limit (ppmv @ 15% O_2)**
10.0 MW and greater, with SCR	≥877	9 x EFF/25

Where EFF (efficiency) is the higher of EFF_1 or EFF_2 below. An EFF that is less than 25 shall be assigned a value of 25.

$$EFF_1 = \frac{3{,}412(Btu/kW-hr)}{ActualHeatRate@HHVB(Btu/kW-hr)} X100\%$$

EFF_1 is the demonstrated percent efficiency of the gas turbine only, as calculated without consideration of any downstream energy recovery from the actual heat rate (Btu/KW-hr); corrected to HHV and standard conditions, as measured at peak load for that facility.

$$EFF_2 = EFF_{mfr}\frac{LHV}{HHV}$$

EFF_2 is EFF_{mfr} after correction from LHV to HHV at peak load for that facility. EFF_{mfr} is the manufacturer's continuous rated percent efficiency of the gas turbine with air pollution control equipment at LHV.

The Actual Heat Rate @ HHV for the GE LM-6000 turbine is 9,650 Btu/kW-hr as reported by the manufacturer:

$EFF_1 = (3{,}412 / 9{,}650) \times 100$

$EFF_1 = 35.4\%$

Therefore, when gas fired:

$NO_X = 9 \times 35.4 / 25$

$NO_X = 12.7$ ppmv @ 15% O_2

EFF_2 calculations are not necessary since Rule 4703 emission limits will be no lower than 5 ppmv NO_X and the turbine will be limited to a maximum of 3.5 ppmv NO_X @ 15% O_2; therefore compliance is expected.

Section 5.1.2, Table 5-2, Tier 2 NOx Compliance Limits, requires the owner or operator to achieve less than or equal to 5 ppmvd NOx @ 15% O_2 to meet Tier-2 compliance schedule listed in Section 7.2.

Tier 2 NO_X Compliance Limits			
Turbine Classification Rating	Compliance Option (see Section 7.2)	NO_X Compliance Limit, ppmvd at 15% O_2	
		Gas Fuel	Liquid Fuel
e) Greater than 10 MW, Simple cycle, and permit condition for greater than 877 hrs/yr operation	Standard	5	25

The turbine in this project is 45.4 MW with simple cycle; therefore it is subject to limit e) Greater than 10 MW, simple cycle, and permit condition for greater than 877 hrs/yr operation.

Section 5.2, Table 5-4, CO Compliance Limits, requires the owner or operator to operate and maintain the gas turbine such that CO emissions must be less than 200 ppmvd @ 15% O_2. Rule 4703 does not include a specific averaging period requirement for demonstrating compliance with the CO emission limit.

- Except during periods of startup and shutdown, emission rates from the natural gas-fired turbine engine shall not exceed any of the following limits: 5.7 lb-NOx/hour (as NO2) equivalent to 3.5 ppmvd @ 15% O2, 1.26 lb-SOx/hour (as SO2), 2.92 lb-PM10/hour, 5.92 lb-CO/hour equivalent to 6.0 ppmvd @ 15% O2, 1.15 lb-VOC/hour (as methane) equivalent to 2.0 ppmv @ 15% O2, or 10 ppmv ammonia @ 15% O2. All emission limits are based on one (1) hour rolling averages. [District Rules 2201, 4001, and 4703, 5.1.2 & 5.2]

NOx and CO emission limits of Section 5.1 and Section 5.2 shall not apply during a transitional operation period, which includes bypass transition period, as defined in Section 3.0, provided an operator complies with the applicable requirements specified in Sections 5.3.1 and 5.3.2.

Section 5.3.1 requires the an operator to meet the following conditions:

- The duration of each startup or each shutdown shall not exceed two hours.
- For each bypass transition period, the requirements specified in Section 3.2 shall be met.
- For each primary re-ignition period, the requirements specified in Section 3.20 shall be met[1].
- Each reduced load period shall not exceed one hour.

The facility has demonstrated compliance with the two hour startup and shutdown duration requirements.

- Reduced load period is defined as the time during which a gas turbine is operated at less than rated capacity in order to change the position of the exhaust gas diverter gate. Each reduced load period shall not exceed one hour. [District Rule 4703, 3.23 and 5.3]

- Startup shall be defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operations. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rule 4703, 3.26, 3.29 and 5.3]

- During periods of startup and shutdown, emission rates from the natural gas-fired turbine engine shall not exceed any of the following limits: 20 lb-NOx/hour (as NO2), 1.26 lb-SOx/hour (as SO2), 2.92 lb-PM10/hour, 5.92 lb-CO/hour, or 1.15 lb-VOC/hour (as methane), based on one (1) hour averages. [District Rules 2201, 4001, and 4703, 5.3]

- The duration of each startup or each shutdown shall not exceed two hours. [District 4703, 5.3.1.1]

Section 5.3.2 requires the emission control system to be in operation and emissions shall be minimized insofar as technologically feasible during each transitional operation period.

- The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703, 5.3.2]

Section 6.2.1 requires the owner to operate and maintain continuous emissions monitoring equipment for NO_X and oxygen, or install and maintain APCO-approved alternate monitoring. The facility operates continuous emissions monitoring system which continuously measures and records the exhaust gas NO_X and oxygen concentrations.

[1] This requirement is applicable to a gas turbine with dry low-NOx combustors. Each turbine under this project is equipped with water injection system. Thus, this requirement is not applicable to these units.

- The owner or operator shall install, certify, maintain, operate and quality-assure a Continuous Emission Monitoring System (CEMS) which continuously measures and records the exhaust gas NOx and O2 concentrations. The CEM shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [40 CFR 60.334(b) and District Rule 4703, 6.2.1]

- The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), and emission measurements. [40 CFR 60.7(b) and District Rule 1080; 7.0, 2201; and 4703, 6.2.1 and 6.2.8]

- The permittee shall maintain the following records: continuous emission monitor measurements and calculated NOx mass emission rates (lb/hr). [District Rules 2201 and 4703, 6.2]

Section 6.2.2 specifies monitoring requirements for turbines without exhaust-gas NO_X control devices. For turbines without exhaust-gas NOx control devices and without continuous emissions monitoring equipment, the owner or operator shall monitor operational characteristics recommended by the turbine manufacturer or emission control system supplier, and approved by the APCO. The facility operates continuous emissions monitoring system, therefore, this section is not applicable.

Section 6.2.4 requires the facility to maintain all records for a period of five years from the date of data entry and shall make such records available to the APCO upon request.

- The owner or operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2, 2201 and 4703, 6.2.4]

Section 6.2.5 requires that the owner or operator submit to the APCO, before issuance of the Permit to Operate, information correlating the control system operating to the associated measure NO_X output. Since these units are currently permitted, this information has previously been collected and no further information is needed.

Section 6.2.6 requires the facility to maintain a stationary gas turbine system operating log that includes, on a daily basis, the actual local startup and stop time, length and reason for reduced load periods, total hours of operation, and the type and quantity of fuel used. The facility will be required to maintain a log in accordance with the requirements of this section.

- The owner or operator shall maintain a stationary gas turbine system operating log that includes, on a daily basis, the actual local start-up and stop time, duration of start-up or shutdown, length and reason for reduced load periods, total hours of operation, type and quantity of fuel used. [District Rule 4703, 6.2.6]

Section 6.2.8 requires the owners or operators performing startups or shutdowns to keep records of the duration of each startup and shutdown. As discussed in the Section 6.2.6 discussion above for this rule, the facility will maintain an operating log that will satisfy the requirements of this section.

Section 6.3.1 states that the owner or operator of any stationary gas turbine system subject to the provisions of Section 5.0 of this rule shall provide source test information annually regarding the exhaust gas NO_X and CO concentrations. The gas turbine is required to be tested annually to ensure compliance with NO_X and CO concentrations.

- Compliance testing to demonstrate compliance with the PM10, NOx (as NO2), VOC, CO, ammonia emission limits, and fuel gas sulfur content requirements of this permit shall be conducted at least once every twelve months. [District Rules 2201, 4001, and 4703, 6.3.1]

Section 6.3.2 specifies source testing requirements for units operating less than 877 hours per year. The turbine at this facility will be allowed to operate in excess of 877 hours per year. Therefore, the requirements of this section are not applicable and no further discussion is required.

Section 6.3.3 requires that 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 turbine in this project is not equipped with intermittently operated auxiliary burners; therefore they are not subject to the requirements of this section.

Section 6.4 states that the facility must demonstrate compliance annually with the NO_X and CO emission limits using the following test methods, unless otherwise approved by the APCO and EPA:

  - 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.

- The following test methods shall be used: NOx - EPA Method 7E or 20; CO - EPA Method 10 or 10B; VOC - EPA Method 18 or 25; PM10 - EPA Method 5 (front half and back half); ammonia - BAAQMD ST-1B; O2 - EPA Method 3, 3A, or 20; and fuel gas sulfur content: ASTM D3246. NOx test results shall be corrected to ISO standard conditions as defined in 40 CFR 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. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335(a) and 40 CFR 60.335(b)(1)]

- The HHV and LHV of the gaseous fuel shall be determined by using ASTM D3588, ASTM 1826, or ASTM 1945. [40 CFR 60.332(a) and (b) and District Rule 4703, 6.4.5]

The District has determined that the facility is operating in compliance with the requirements of this rule, therefore, no further discussion is required.

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:

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 (Universal Gas Constant) = $\frac{10.73\,psi \cdot ft^3}{lb \cdot mol \cdot {}^\circ R}$
EPA F-Factor for Natural Gas: 8,710 dscf/MMBtu at 68 °F, equivalent to

$$Corrected\ F-factor = \left(\frac{8{,}710 dscf}{MMBtu}\right) \times \left(\frac{60^o F + 459.6}{68^o F + 459.6}\right) = 8{,}578 \frac{dscf}{MMBtu}\ \ at\ 60^o F$$

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

$$SulfurConcentration = 1.97 \frac{parts}{million}$$

Since 1.97 ppmv < 2,000 ppmv (or 0.2%), compliance with District Rule 4101 requirements is expected.

California Health & Safety Code 42301.6 (School Notice)

The District has verified that 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 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.

Greenhouse Gas (GHG) Significance Determination

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

This project would not result in an increase in project specific greenhouse gas emissions as there will be no increase in annual fuel usage limit at the facility. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authority to Construct C-3843-1-9 subject to the permit conditions on the attached draft Authority to Construct in Appendix B.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
C-3843-1-9	3020-08B-G	45.4 MW power generating system	$10,215.00

Appendices

A: Current PTO
B: Draft ATC
C: HRA Summary
D: Quarterly Net Emissions Change

APPENDIX A

Current PTO

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-3843-1-7 **EXPIRATION DATE:** 12/31/2015

EQUIPMENT DESCRIPTION:
45.4 MW GENERAL ELECTRIC LM-6000 NATURAL GAS-FIRED SIMPLE CYCLE GAS TURBINE ENGINE WITH WATER OR STEAM INJECTION, SERVED BY SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM AND OXIDATION CATALYST

PERMIT UNIT REQUIREMENTS

1. The owner or operator shall install, certify, maintain, operate and quality-assure a Continuous Emission Monitoring System (CEMS) which continuously measures and records the exhaust gas NOx and O2 concentrations. The CEM shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [40 CFR 60.334(b) and District Rule 4703, 6.2.1] Federally Enforceable Through Title V Permit
2. The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [40 CFR 60.334(b)(2) and District Rule 1080, 6.4] Federally Enforceable Through Title V Permit
3. The NOx and O2 CEMS shall meet the requirements in 40 CFR 60, Appendix F Procedure 1 and Part 60, Appendix B Performance Specifications 2 and 3, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [40 CFR 60.334(b)(1) and, District Rule 1080, 6.3, 6.5, 6.6, & 7.2] Federally Enforceable Through Title V Permit
4. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit
5. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), and emission measurements. [40 CFR 60.7(b) and District Rule 1080, 7.0, 2201, and 4703, 6.2.1] Federally Enforceable Through Title V Permit
6. Operators of CEM systems installed at the direction of the APCO shall submit a written report 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 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. [40 CFR 60.334(j), (j)(5) and District Rule 1080, 8.0] Federally Enforceable Through Title V Permit
7. APCO or an authorized representative shall be allowed to inspect, as he or she determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

8. The owner or operator shall be required to conform to the compliance testing and sampling procedures described in District Rule 1081 (as amended 12/16/93). [District Rule 1081] Federally Enforceable Through Title V Permit

9. 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] Federally Enforceable Through Title V Permit

10. The sulfur content of each fuel source shall be documented in a valid purchase contract, a supplier certification, a tariff sheet, or a transportation contract. [40 CFR 60.334(h)(3) and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

11. If the unit is not fired on PUC-regulated natural gas, the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM D1072-80, 90 (Reapproved 1994); D3246-81, 92, 96; D4468-85 (Reapproved 2000); or D6667-01. [40 CFR 60.335(10)(ii)] Federally Enforceable Through Title V Permit

12. Reduced load period is defined as the time during which a gas turbine is operated at less than rated capacity in order to change the position of the exhaust gas diverter gate. Each reduced load period shall not exceed one hour. [District Rule 4703, 3.23 and 5.3] Federally Enforceable Through Title V Permit

13. Startup shall be defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operations. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rule 4703, 3.26, 3.29 and 5.3] Federally Enforceable Through Title V Permit

14. 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 O2 (or both). [40 CFR 60.334(J)(1)(iii)] Federally Enforceable Through Title V Permit

15. The owner or operator shall provide source test information annually regarding the exhaust gas NOx and CO concentration corrected to 15% O2 (dry). EPA Methods 7E or 20 shall be used for NOx emissions. EPA Methods 10 or 10B shall be used for CO emissions. EPA Methods 3, 3A, or 20 shall be used for Oxygen content of the exhaust gas. [40 CFR 60.8(a) and District Rule 4703, 5.1, 6.3.1 and 6.4] Federally Enforceable Through Title V Permit

16. All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [40 CFR 60.13(b)] Federally Enforceable Through Title V Permit

17. The owner or operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2, and 2201] Federally Enforceable Through Title V Permit

18. Results of the CEM system shall be averaged over a three hour period, using consecutive 15-minute sampling periods in accordance with all applicable requirements of CFR 60.13. [40 CFR 60.13 and District Rule 4703, 5.1 & 6.4] Federally Enforceable Through Title V Permit

19. The HHV and LHV of the gaseous fuel shall be determined by using ASTM D3588, ASTM 1826, or ASTM 1945. [40 CFR 60.332(a) and (b) and District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit

20. Compliance with permit conditions in the Title V permit shall be deemed compliance with the Fresno County Rule 406. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

21. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332 (a)(1), (a)(2), 60.333 (b); 60.334(b) (b)(1), (b)(2), (h)(3), (j), (j)(1)(iii), and (j)(5), and 60.335(a), (b)(7), (b)(3). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

22. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.13, and District Rules 1080 (as amended 12/17/92), Sections 6.3, 6.4, 6.5, 6.6, 7.1, 7.2, 7.3, 8.0, and 11.0; 1081(as amended 12/16/93), Sections 3.0, 6.0, 7.1, 7.2, and 7.3; and 4201 (as amended 12/17/92). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

23. 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 NSR Rule] Federally Enforceable Through Title V Permit

24. Gas turbine engine and 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 up to three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit

25. The CEMS shall be linked to a data logger which is compatible with the District's Data acquisition system. 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, 7.1] Federally Enforceable Through Title V Permit

26. 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. [District Rule 1081] Federally Enforceable Through Title V Permit

27. This unit shall be fired exclusively on natural gas as defined in 40 CFR 60.331(u) which has a total sulfur content of less than or equal to 1.0 gr/100 scf. [40 CFR 60.333(b), District Rule 4201 and Fresno County Rule 406] Federally Enforceable Through Title V Permit

28. Combined annual emissions from units C-3843-1 and -4 shall not exceed any of the following limits: 19,958 lb-NOx/year, 4,409 lb-SOx/year, 10,211 lb-PM10/year, 20,731 lb-CO/year, and 4,022 lb-VOC/year. [District Rule 2201] Federally Enforceable Through Title V Permit

29. Maximum annual heat input for the natural gas-fired turbine engine shall not exceed 1,547,100 MMBtu/year, bases on HHV, measured on a calendar year period. [District Rule 2201] Federally Enforceable Through Title V Permit

30. Daily NOx emissions from the natural gas-fired turbine engine shall not exceed 135.0 lb-NOx/day, measured on a 24 hour rolling period. [District Rule 2201] Federally Enforceable Through Title V Permit

31. Except during periods of startup and shutdown, emission rates from the natural gas-fired turbine engine shall not exceed any of the following limits: 5.62 lb-NOx/hour (as NO2) equivalent to 3.5 ppmvd @ 15% O2, 1.24 lb-SOx/hour (as SO2), 2.88 lb-PM10/hour, 5.84 lb-CO/hour equivalent to 6.0 ppmvd @ 15% O2, 1.13 lb-VOC/hour (as methane) equivalent to 2.0 ppmv @ 15% O2, or 10 ppmv ammonia @ 15% O2. All emission limits are based on one (1) hour rolling averages. [District Rules 2201, 4001, and 4703, 5.1.2 & 5.2] Federally Enforceable Through Title V Permit

32. During periods of startup and shutdown, emission rates from the natural gas-fired turbine engine shall not exceed any of the following limits: 20 lb-NOx/hour (as NO2), 1.24 lb-SOx/hour (as SO2), 2.88 lb-PM10/hour, 5.84 lb-CO/hour, or 1.13 lb-VOC/hour (as methane), based on one (1) hour averages. [District Rules 2201, 4001, and 4703, 5.3] Federally Enforceable Through Title V Permit

33. The duration of each startup or each shutdown shall not exceed two hours. [District 4703, 5.3.1.1] Federally Enforceable Through Title V Permit

34. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703, 5.3.2] Federally Enforceable Through Title V Permit

35. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,000,000/b), where a = ammonia injection rate (lb/hr)/17 (lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/29 (lb/lb. mol), and c = change in measured NOx concentration ppmv at 15% O2 across catalyst. [District Rule 4102]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

36. Compliance testing to demonstrate compliance with the PM10, NOx (as NO2), VOC, CO, ammonia emission limits, and fuel gas sulfur content requirements of this permit shall be conducted at least once every twelve months. [District Rules 2201, 4001, and 4703, 6.3.1] Federally Enforceable Through Title V Permit

37. Compliance demonstration (source testing) shall be District witnessed, or authorized and samples shall be collected by a California Air Resources Board 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] Federally Enforceable Through Title V Permit

38. The following test methods shall be used PM10: EPA Method 5 (front half and back half), NOx: EPA Method 7E or 20, 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. Alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, and 4703, 6.4] Federally Enforceable Through Title V Permit

39. The permittee shall maintain the following records: hours of operation, fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitor measurements, and calculated NOx mass emission rates (lb/hr). [District Rules 2201 and 4703, 6.2] Federally Enforceable Through Title V Permit

40. The owner or operator shall maintain a stationary gas turbine system 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. [District Rule 4703, 6.2.6] Federally Enforceable Through Title V Permit

41. 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] Federally Enforceable Through Title V Permit

42. 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. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit

43. 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 superceding Acid Rain permit issued by the permitting authority; and (ii) Have an Acid Rain permit. [40 CFR 72] Federally Enforceable Through Title V Permit

44. 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. [40 CFR 75] Federally Enforceable Through Title V Permit

45. The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the unit with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program. [40 CFR 75] Federally Enforceable Through Title V Permit

46. 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 unit's compliance subaccount (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 unit; and (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide. [40 CFR 73] Federally Enforceable Through Title V Permit

47. 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. [40 CFR 77] Federally Enforceable Through Title V Permit

48. Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program. [40 CFR 72] Federally Enforceable Through Title V Permit

49. An allowance shall not be deducted in order to comply with the requirements under 40 CFR part 73, prior to the calendar year for which the allowance was allocated. [40 CFR 73] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

50. 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 the written exemption under 40 CFR 72.7 and 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization. [40 CFR 72] Federally Enforceable Through Title V Permit

51. An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right. [40 CFR 72] Federally Enforceable Through Title V Permit

52. The designated representative of an affected unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77. [40 CFR 77] Federally Enforceable Through Title V Permit

53. The owners and operators of an affected unit that has excess emissions in any calendar year shall: (i) Pay without demand the penalty required, and pay up on demand the interest on that penalty; and (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77. [40 CFR 77] Federally Enforceable Through Title V Permit

54. The owners and operators of the each affected unit at the source shall keep on site the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority: (i) The certificate of representation for the designated representative for 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 beyond such five-year period until such documents are superceded because of the submission of a new certificate of representation changing the designated representative. [40 CFR 72] Federally Enforceable Through Title V Permit

55. The owners and operators of each affected unit at the source shall keep on site each of the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority; (ii) All emissions monitoring information, in accordance with 40 CFR part 75; (iii) Copies of all reports, compliance certifications and other submissions and all records made or required under the Acid Rain Program; (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission that demonstrates compliance with the requirements of the Acid Rain Program. [40 CFR 75] Federally Enforceable Through Title V Permit

56. 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 75 Subpart I. [40 CFR 75] Federally Enforceable Through Title V Permit

APPENDIX B

Draft PTO

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-3843-1-9 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: WELLHEAD POWER GATES, LLC.
MAILING ADDRESS: 650 BERCUT DRIVE STE C
SACRAMENTO, CA 95814

LOCATION: S-29,T-20S,R-17E
HURON, CA

EQUIPMENT DESCRIPTION:
MODIFICATION OF 45.4 MW GENERAL ELECTRIC LM-6000 NATURAL GAS-FIRED SIMPLE CYCLE GAS TURBINE ENGINE WITH WATER OR STEAM INJECTION, SERVED BY SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM AND OXIDATION CATALYST: INSTALL A WET COMPRESSION SYSTEM AND INCREASE THE MAXIMUM HEAT INPUT OF THE TURBINE FROM 436 MMBTU/HR TO 442 MMBTU/HR

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The owner or operator shall install, certify, maintain, operate and quality-assure a Continuous Emission Monitoring System (CEMS) which continuously measures and records the exhaust gas NOx and O2 concentrations. The CEM shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [40 CFR 60.334(b) and District Rule 4703, 6.2.1] Federally Enforceable Through Title V Permit
4. The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [40 CFR 60.334(b)(2) and District Rule 1080, 6.4] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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
C-3843-1-9 : Mar 3 2011 8:21AM – BRARG : Joint Inspection NOT Required

5. The NOx and O2 CEMS shall meet the requirements in 40 CFR 60, Appendix F Procedure 1 and Part 60, Appendix B Performance Specifications 2 and 3, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [40 CFR 60.334(b)(1) and, District Rule 1080, 6.3, 6.5, 6.6, & 7.2] Federally Enforceable Through Title V Permit

6. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

7. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), and emission measurements. [40 CFR 60.7(b) and District Rule 1080, 7.0; 2201 and 4703, 6.2.1 and 6.2.8] Federally Enforceable Through Title V Permit

8. Operators of CEM systems installed at the direction of the APCO shall submit a written report 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 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. [40 CFR 60.334(j), (j)(5) and District Rule 1080, 8.0] Federally Enforceable Through Title V Permit

9. APCO or an authorized representative shall be allowed to inspect, as he or she determines to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit

10. The owner or operator shall be required to conform to the compliance testing and sampling procedures described in District Rule 1081 (as amended 12/16/93). [District Rule 1081] Federally Enforceable Through Title V Permit

11. 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] Federally Enforceable Through Title V Permit

12. The sulfur content of each fuel source shall be documented in a valid purchase contract, a supplier certification, a tariff sheet, or a transportation contract. [40 CFR 60.334(h)(3) and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

13. If the unit is not fired on PUC-regulated natural gas, the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM D1072-80, 90 (Reapproved 1994); D3246-81, 92, 96; D4468-85 (Reapproved 2000); or D6667-01. [40 CFR 60.335(b)(10)(ii)] Federally Enforceable Through Title V Permit

14. Reduced load period is defined as the time during which a gas turbine is operated at less than rated capacity in order to change the position of the exhaust gas diverter gate. Each reduced load period shall not exceed one hour. [District Rule 4703, 3.23 and 5.3] Federally Enforceable Through Title V Permit

15. Startup shall be defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operations. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rule 4703, 3.26, 3.29 and 5.3] Federally Enforceable Through Title V Permit

16. 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 O2 (or both). [40 CFR 60.334(J)(1)(iii)] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

17. The owner or operator shall provide source test information annually regarding the exhaust gas NOx and CO concentration corrected to 15% O2 (dry). EPA Methods 7E or 20 shall be used for NOx emissions. EPA Methods 10 or 10B shall be used for CO emissions. EPA Methods 3, 3A, or 20 shall be used for Oxygen content of the exhaust gas. [40 CFR 60.8(a) and District Rule 4703, 5.1, 6.3.1 and 6.4] Federally Enforceable Through Title V Permit

18. All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device. [40 CFR 60.13(b)] Federally Enforceable Through Title V Permit

19. The owner or operator of a stationary gas turbine system shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2; 2201 and 4703, 6.2.4] Federally Enforceable Through Title V Permit

20. Results of the CEM system shall be averaged over a three hour period, using consecutive 15-minute sampling periods in accordance with all applicable requirements of CFR 60.13. [40 CFR 60.13 and District Rule 4703, 5.1 & 6.4] Federally Enforceable Through Title V Permit

21. The HHV and LHV of the gaseous fuel shall be determined by using ASTM D3588, ASTM 1826, or ASTM 1945. [40 CFR 60.332(a) and (b) and District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit

22. Compliance with permit conditions in the Title V permit shall be deemed compliance with the Fresno County Rule 406. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

23. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: 60.333 (b); 60.334 (b), (b)(1), (b)(2), (h)(3), (j)(1)(iii), and (j)(5), and 60.335(a), (b)(1), (b)(10). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

24. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.13, and District Rules 1080 (as amended 12/17/92), Sections 6.3, 6.4, 6.5, 6.6, 7.1, 7.2, 7.3, 8.0, and 11.0; 1081(as amended 12/16/93), Sections 3.0, 6.0, 7.1, 7.2, and 7.3; and 4201 (as amended 12/17/92). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

25. 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 NSR Rule] Federally Enforceable Through Title V Permit

26. Gas turbine engine and 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 up to three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit

27. The CEMS shall be linked to a data logger which is compatible with the District's Data acquisition system. 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, 7.1] Federally Enforceable Through Title V Permit

28. 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. [District Rule 1081] Federally Enforceable Through Title V Permit

29. This unit shall be fired exclusively on natural gas as defined in 40 CFR 60.331(u) which has a total sulfur content of less than or equal to 1.0 gr/100 scf. [40 CFR 60.333(b), District Rule 4201 and Fresno County Rule 406] Federally Enforceable Through Title V Permit

30. Combined annual emissions from units C-3843-1 and -4 shall not exceed any of the following limits: 19,958 lb-NOx/year, 4,409 lb-SOx/year, 10,211 lb-PM10/year, 20,731 lb-CO/year, and 4,022 lb-VOC/year. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

31. Maximum annual heat input for the natural gas-fired turbine engine shall not exceed 1,547,100 MMBtu/year, bases on HHV, measured on a calendar year period. [District Rule 2201] Federally Enforceable Through Title V Permit

32. Daily NOx emissions from the natural gas-fired turbine engine shall not exceed 136.8 lb-NOx/day, measured on a 24 hour rolling period. [District Rule 2201] Federally Enforceable Through Title V Permit

33. Except during periods of startup and shutdown, emission rates from the natural gas-fired turbine engine shall not exceed any of the following limits: 5.7 lb-NOx/hour (as NO2) equivalent to 3.5 ppmvd @ 15% O2, 1.26 lb-SOx/hour (as SO2), 2.92 lb-PM10/hour, 5.92 lb-CO/hour equivalent to 6.0 ppmvd @ 15% O2, 1.15 lb-VOC/hour (as methane) equivalent to 2.0 ppmv @ 15% O2, or 10 ppmv ammonia @ 15% O2. All emission limits are based on one (1) hour rolling averages. [District Rules 2201, 4001, and 4703, 5.1.2 & 5.2] Federally Enforceable Through Title V Permit

34. During periods of startup and shutdown, emission rates from the natural gas-fired turbine engine shall not exceed any of the following limits: 20 lb-NOx/hour (as NO2), 1.26 lb-SOx/hour (as SO2), 2.92 lb-PM10/hour, 5.92 lb-CO/hour, or 1.15 lb-VOC/hour (as methane), based on one (1) hour averages. [District Rules 2201, 4001, and 4703, 5.3] Federally Enforceable Through Title V Permit

35. The duration of each startup or each shutdown shall not exceed two hours. [District 4703, 5.3.1.1] Federally Enforceable Through Title V Permit

36. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703, 5.3.2] Federally Enforceable Through Title V Permit

37. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,000,000/b), where a = ammonia injection rate (lb/hr)/17 (lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/29 (lb/lb. mol), and c = change in measured NOx concentration ppmv at 15% O2 across catalyst. [District Rule 4102]

38. Compliance testing to demonstrate compliance with the PM10, NOx (as NO2), VOC, CO, ammonia emission limits, and fuel gas sulfur content requirements of this permit shall be conducted at least once every twelve months. [District Rules 2201, 4001, and 4703, 6.3.1] Federally Enforceable Through Title V Permit

39. Compliance demonstration (source testing) shall be District witnessed, or authorized and samples shall be collected by a California Air Resources Board 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] Federally Enforceable Through Title V Permit

40. The following test methods shall be used: NOx - EPA Method 7E or 20; CO - EPA Method 10 or 10B; VOC - EPA Method 18 or 25; PM10 - EPA Method 5 (front half and back half); ammonia - BAAQMD ST-1B; O2 - EPA Method 3, 3A, or 20; and fuel gas sulfur content: ASTM D3246. NOx test results shall be corrected to ISO standard conditions as defined in 40 CFR 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. [District Rules 1081 and 4703, 6.4; and 40 CFR 60.335(a) and 40 CFR 60.335(b)(1)] Federally Enforceable Through Title V Permit

41. The permittee shall maintain the following records: fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitor measurements and calculated NOx mass emission rates (lb/hr). [District Rules 2201 and 4703, 6.2] Federally Enforceable Through Title V Permit

42. The owner or operator shall maintain a stationary gas turbine system 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. [District Rule 4703, 6.2.6] Federally Enforceable Through Title V Permit

43. 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] Federally Enforceable Through Title V Permit

44. 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. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

45. 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 superceding Acid Rain permit issued by the permitting authority; and (ii) Have an Acid Rain permit. [40 CFR 72] Federally Enforceable Through Title V Permit

46. 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. [40 CFR 75] Federally Enforceable Through Title V Permit

47. The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the unit with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program. [40 CFR 75] Federally Enforceable Through Title V Permit

48. 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 unit's compliance subaccount (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 unit; and (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide. [40 CFR 73] Federally Enforceable Through Title V Permit

49. 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. [40 CFR 77] Federally Enforceable Through Title V Permit

50. Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program. [40 CFR 72] Federally Enforceable Through Title V Permit

51. An allowance shall not be deducted in order to comply with the requirements under 40 CFR part 73, prior to the calendar year for which the allowance was allocated. [40 CFR 73] Federally Enforceable Through Title V Permit

52. 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 the written exemption under 40 CFR 72.7 and 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization. [40 CFR 72] Federally Enforceable Through Title V Permit

53. An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right. [40 CFR 72] Federally Enforceable Through Title V Permit

54. The designated representative of an affected unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77. [40 CFR 77] Federally Enforceable Through Title V Permit

55. The owners and operators of an affected unit that has excess emissions in any calendar year shall: (i) Pay without demand the penalty required, and pay up on demand the interest on that penalty; and (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77. [40 CFR 77] Federally Enforceable Through Title V Permit

56. The owners and operators of the each affected unit at the source shall keep on site the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority: (i) The certificate of representation for the designated representative for 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 beyond such five-year period until such documents are superceded because of the submission of a new certificate of representation changing the designated representative. [40 CFR 72] Federally Enforceable Through Title V Permit

57. The owners and operators of each affected unit at the source shall keep on site each of the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority; (ii) All emissions monitoring information, in accordance with 40 CFR part 75; (iii) Copies of all reports, compliance certifications and other submissions and all records made or required under the Acid Rain Program; (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission that demonstrates compliance with the requirements of the Acid Rain Program. [40 CFR 75] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

58. 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 75 Subpart I. [40 CFR 75] Federally Enforceable Through Title V Permit

APPENDIX C

HRA Summary

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Gurpreet Brar – Permit Services
From:	Cheryl Lawler – Technical Services
Date:	February 22, 2011
Facility Name:	Wellhead Power Gates, LLC
Location:	39950 S. Butte, Huron
Application #(s):	C-3843-1-9
Project #:	C-1110070

A. RMR SUMMARY

RMR Summary			
Categories	**442 MMBtu/hr Natural Gas Turbine (Unit 1-9)**	**Project Totals**	**Facility Totals**
Prioritization Score	**0.03***	0.03	0.05
Acute Hazard Index	N/A	N/A	N/A
Chronic Hazard Index	N/A	N/A	N/A
Maximum Individual Cancer Risk	N/A	N/A	N/A
T-BACT Required?	**No**		
Special Permit Conditions?	**No**		

*The project passed on prioritization with a score less than 1; therefore, no further analysis was required.

I. Project Description

Technical Services received a request on February 17, 2011, to perform a Risk Management Review for a natural gas turbine for which the applicant is proposing to increase the maximum heat input of the turbine from 436 MMBtu/hr to 442 MMBtu/hr. Per the processing engineer, the increase in the turbine's maximum heat input will only result in an increase in the daily emissions, as the applicant has proposed to keep the unit's current annual fuel usage limit.

II. Analysis

Toxic emissions for the turbine were calculated using District approved emission factors for natural gas combustion. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the proposed project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was less than 1.0 (see RMR Summary Table). Therefore, no further analysis was necessary.

The following parameters were used for the review:

Analysis Parameters			
Facility Location Type	Rural	**Closest Receptor (m)**	1402
Natural Gas Process Rate (mmscf/hr)	0.44	**Closest Receptor Type**	Residence & Business

III. Conclusion

The prioritization score for this project is not above 1.0. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

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.

APPENDIX D

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 - PE1, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

As shown previously in Section VII.C.5 this facility is not a Major Source for any criteria pollutant. Thus, PE1 = PE2 for all criteria pollutants.

	PE1 (lb/year)	PE1 (lb/qtr)
NO_X	19,958	4,990
SO_X	4,409	1,102
PM_{10}	10,211	2,553
CO	20,731	5,183
VOC	4,022	1,006

Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO_X	4,990	4,990	0
SO_X	1,102	1,102	0
PM_{10}	2,553	2,553	0
CO	5,183	5,183	0
VOC	1,006	1,006	0