



MAR 21 2011

Mr. Tim Parcel
Aera Energy LLC
PO Box 11164
Bakersfield, CA. 93389

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # C-1121
Project # C-1101107**

Dear Mr. Parcel:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. The applicant is requesting that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. Aera requests to install a second sulfur treatment system serving four (4) 62.5 MMBtu/hr gas-fired steam generators (C-1121-17-24, '-18-24, '-19-24, and '-41-24) for compliance with the sulfur emissions requirements of District Rule 4320.

After addressing any EPA comments made during the 45-day comment period, the Authorities to Construct will be issued to the facility with Certificates of Conformity. Prior to operating with modifications authorized by the Authorities 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. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

DW: ST/cm

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
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Bakersfield, CA 93308-9725
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San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



HEALTHY AIR LIVING™

MAR 21 2011

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

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # C-1121
Project # C-1101107**

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authorities to Construct for Aera Energy LLC Coalinga, which has been issued a Title V permit. Aera Energy LLC is requesting that Certificates of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. Aera requests to install a second sulfur treatment system serving four (4) 62.5 MMBtu/hr gas-fired steam generators (C-1121-17-24, '-18-24, '-19-24, and '-41-24) for compliance with the sulfur emissions requirements of District Rule 4320.

Enclosed is the engineering evaluation of this application with a copy of the current Title V permit and proposed Authorities to Construct # C-1121-17-24, '-18-24, '-19-24, '-41-24, and '-168-10 with Certificates 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. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

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San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



HEALTHY AIR LIVING™

MAR 21 2011

Mike Tollstrup, Chief
Project Assessment Branch
Air Resources Board
P O Box 2815
Sacramento, CA 95812-2815

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # C-1121
Project # C-1101107**

Dear Mr. Tollstrup:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. The applicant is requesting that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. Aera requests to install a second sulfur treatment system serving four (4) 62.5 MMBtu/hr gas-fired steam generators (C-1121-17-24, '-18-24, '-19-24, and '-41-24) for compliance with the sulfur emissions requirements of District Rule 4320.

Enclosed is the engineering evaluation of this application with a copy of the current Title V permit and proposed Authorities to Construct # C-1121-17-24, '-18-24, '-19-24, '-41-24, and '-168-10 with Certificates of Conformity. After demonstrating compliance with the Authorities 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 30-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

DW: SD/cm

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Fresno Bee

**NOTICE OF PRELIMINARY DECISION
FOR THE ISSUANCE OF AUTHORITY TO CONSTRUCT AND
THE PROPOSED SIGNIFICANT MODIFICATION OF FEDERALLY
MANDATED OPERATING PERMIT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed modification of Aera Energy LLC for its Fresno County heavy oil production operation, Coalinga, California. Aera requests to install a second sulfur treatment system serving four (4) 62.5 MMBtu/hr gas-fired steam generators (C-1121-17-24, '-18-24, '-19-24, and '-41-24) for compliance with the sulfur emissions requirements of District Rule 4320.

The District's analysis of the legal and factual basis for this proposed action, project #C-1101107, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. This will be the public's only opportunity to comment on the specific conditions of the modification. If requested by the public, the District will hold a public hearing regarding issuance of this modification. For additional information, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900. Written comments on the proposed initial permit must be submitted within 30 days of the publication date of this notice to DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 E. GETTYSBURG AVE, FRESNO, CA 93726-0244.

**San Joaquin Valley Air Pollution Control District
Authority to Construct
Application Review**

Add Sulfatreat System for Rule 4320 Sulfur Limit Compliance

Facility Name: Aera Energy, LLC	Date: November 18, 2010
Mailing Address: PO Box 11164 Bakersfield, CA	New Proposal Date: March 7, 2010
Contact Person: Tim Parcel	Engineer: Steve Davidson
Telephone: (559) 935-7418	Lead Engineer: Richard Karrs
Fax: (661) 351-3218 Email tparcel@aeraenergy.com	
Application #: C-1121-17-24, '-18-24, '-19-24, '-41-24; and '-168-10	
Project #: C-1101107	
Deemed Complete: April 7, 2010	
Revision Deemed Complete: October 29, 2010	

I. Proposal

Aera Energy, LLC requests Authorities to Construct (ATCs) for the modification existing a sulfur removal system listed on permit C-1121-17 by the addition of a second sulfur removal system (Sulfatreat) placed in series with the existing system. The sulfur treatment systems will serve four (4) 62.5 MMBtu/hr gas-fired steam generators (C-1121-17-24, '-18-24, '-19-24, and '-41-24) for compliance with the sulfur limit of District Rule 4320 (9 ppmv).

Aera Energy has proposed identifying the source of the waste gases authorized to be combusted by the steam generators in this project and to lower the shared annual SO_x emissions from the four steam generators and a flare (C-1121-168) from 103,336 lb/yr to 28,580 lb/yr:

Flare S-1121-168 is currently limited by permit condition to operate 8 days per year (SO_x emissions of 1802 lb/year). Therefore, lowering the shared emissions limit to 28,580 lb/year will not result in a change in method of operation and Rule 2201 will not be triggered.

The current PTOs will serve as the base documents for this project.

Aera Energy has been issued multiple ATCs for steam generators C-1121-17, '18, '19 and '41 to comply with the NOx requirements of Rule 4320. However, as Area is now proposing to implement the Rule 4320 SOx reductions first, the previously issued ATCs will lack the necessary SOx limits and requirements. To address this, Aera will not implement the previously issued ATCs but will submit a follow up project to address the Rule NOx requirements, with the ATCs issued in the current project serving as the base documents.

These modifications are solely to comply with District Rule 4320 PM₁₀ requirements. Since there is a change to the method of operation of the steam generators, the proposed modifications are subject to District Rule 2201, *New and Modified Stationary Source Review Rule* but exempt from BACT and offsets considerations.

Aera received their Title V Permit on December 31, 2001. This modification can be classified as a Title V Significant Modification pursuant to Rule 2520, Section 3.29, 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. Aera must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC (s) issued with this project.

II. Applicable Rules

District Rule 2201	New and Modified Stationary Source Review Rule (12/18/08)
District Rule 2520	Federally Mandated Operating Permits (6/21/01)
District Rule 4001	New Source Performance Standards (4/14/99)
District Rule 4101	Visible Emissions (2/17/05)
District Rule 4102	Nuisance (12/17/92)
District Rule 4201	Particulate Matter Concentration (12/17/92)
District Rule 4301	Fuel Burning Equipment (12/17/92)
District Rule 4305	Boilers, Steam Generators and Process Heaters – Phase 2 (8/21/03)
District Rule 4306	Boilers, Steam Generators and Process Heaters – Phase 3 (3/17/05)
District Rule 4320	Advanced Emission Reductions Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr
District Rule 4351	Boilers, Steam Generators and Process Heaters – Phase 1 (8/21/03)
District 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 equipment is located in the Coalinga Oil Field within Aera's Fresno County Heavy Oil stationary source (Sections: 26, Township: 19S, Range 15E). 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

Steam is utilized to enhance heavy oil recovery. Steam generators produce steam which is injected into the strata to reduce viscosity. Condensed water is extracted with the produced oil and routed to vapor controlled water/oil separators and tanks. Most of the steam generators in this project are authorized to burn TEOR gas from casing gas collection systems and one is also authorized to burn Tank Vapor Recovery (TVR) gas. The applicant proposes to install a second scrubber in order to comply with 9 ppmv limit option of Rule 4320.

The units are designed to operate 24 hr/day, 7 day/week, and 365 day/yr.

V. Equipment Listing

Pre-Project Equipment Descriptions:

PTO C-1121-17-16: SG S-9, 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR WITH COEN QLN ULN BURNER AND FLUE GAS RECIRCULATION SERVED BY LO-COST H2S SCAVENGER SYSTEM SHARED WITH PERMIT UNITS C-1121-18, '-19 AND '-41

PTO C-1121-18-16: SG S-10, 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR WITH A COEN QLN-ULN LOW NOX BURNER, AND A FLUE GAS RECIRCULATION (FGR) SYSTEM SERVED BY LO-COST H2S SCAVENGER SYSTEM SHARED WITH PERMIT UNITS C-1121-17, '-19 AND '-41

PTO C-1121-19-16: SG S-11, 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR WITH A COEN QLN-ULN LOW NOX BURNER AND A FLUE GAS RECIRCULATION (FGR) SYSTEM SERVED BY LO-COST H2S SCAVENGER SYSTEM SHARED WITH PERMIT UNITS C-1121-17, '-18 AND '-41

- PTO C-1121-41-16: 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR (S-12) WITH COEN QLN-ULN BURNER, FLUE GAS RECIRCULATION SERVED BY LO-COST H2S SCAVENGER SYSTEM SHARED WITH PERMIT UNITS C-1121-17, '-18 AND '-19
- PTO C-1121-168-9: DORMANT 7.16 MMBTU/HR FLARE WITH H2S SCAVENGER SYSTEM TO BE USED TO INCINERATE NATURAL, WELL CASING, AND VAPOR RECOVERY GAS DURING MAINTENANCE OF FOUR 62.5 MMBTU/HR STEAM GENERATORS (C-1121-17, -18, -19, AND -41)

Proposed Modifications:

INSTALL SULFATREAT VESSELS DOWNSTREAM OF LO-COST SCAVENGING SYSTEM FOR H2S REMOVAL AND LIMIT EXHAUST SOX EMISSIONS TO 9 PPMV @3% O2 FOR RULE 4320 COMPLIANCE

Post-Project Equipment Descriptions:

- ATC C-1121-17-24: SG S-9, 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR WITH COEN QLN ULN BURNER AND FLUE GAS RECIRCULATION SERVED BY LO-COST H2S SCAVENGER SYSTEM AND SULFATREAT VESSELS SHARED WITH PERMIT UNITS C-1121-18, '-19 AND '-41
- ATC C-1121-18-24: SG S-10, 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR WITH A COEN QLN-ULN LOW NOX BURNER, AND A FLUE GAS RECIRCULATION (FGR) SYSTEM SERVED BY LO-COST H2S SCAVENGER SYSTEM AND SULFATREAT VESSELS SHARED WITH PERMIT UNITS C-1121-17, '-19 AND '-41
- ATC C-1121-19-24: SG S-11, 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR WITH A COEN QLN-ULN LOW NOX BURNER AND A FLUE GAS RECIRCULATION (FGR) SYSTEM SERVED BY LO-COST H2S SCAVENGER SYSTEM AND SULFATREAT VESSELS SHARED WITH PERMIT UNITS C-1121-17, '-18 AND '-41
- ATC C-1121-41-24: 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR (S-12) WITH COEN QLN-ULN BURNER, FLUE GAS RECIRCULATION SERVED BY LO-COST H2S SCAVENGER SYSTEM AND

SULFATREAT VESSELS_SHARED WITH PERMIT UNITS C-1121-17, '-18 AND '-19

PTO C-1121-168-10: DORMANT 7.16 MMBTU/HR FLARE WITH H₂S SCAVENGER SYSTEM TO BE USED TO INCINERATE NATURAL, WELL CASING, AND VAPOR RECOVERY GAS DURING MAINTENANCE OF FOUR 62.5 MMBTU/HR STEAM GENERATORS (C-1121-17, -18, -19, AND -41)

For all the units in this project, Aera has requested to implement these permits prior to addressing the NO_x requirements of Rule 4320. Therefore the following ATCs will be canceled and Aera will resubmit ATCs applications addressing the NO_x requirements of Rule 4320: C-1121-17-19, '-17-21, '-17-22, '-17-23, '-18-19, '-18-21, '-18-22, '-18-23, '-19-19, '-19-21, '-19-2, '-19-23, '-41-19, '-41-21, 41-22, and '-41-23.

VI. Emission Control Technology Evaluation

Emissions from natural gas-fired steam generators include NO_x, CO, VOC, PM₁₀, and SO_x.

NO_x is the major pollutant of concern when burning natural gas. NO_x formation is either due to thermal fixation of atmospheric nitrogen in the combustion air (thermal NO_x) or due to conversion of chemically bound nitrogen in the fuel (fuel NO_x). Due to the low fuel nitrogen content of natural gas, nearly all NO_x emissions are thermal NO_x. Formation of thermal NO_x is affected by four furnace zone factors: (1) nitrogen concentration, (2) oxygen concentration, (3) peak temperature, and (4) time of exposure at peak temperature.

Flue gas recirculation (FGR) reduces NO_x emissions by recirculating a percentage of the exhaust gas back into the windbox. This reduces the oxygen concentration in the air-fuel mixture and regulates the combustion process, lowering the combustion temperature. The lowered availability of oxygen in conjunction with lowered combustion temperature reduces the formation of NO_x.

SO_x emissions are controlled by scrubber systems on the incoming recovery gas. This lowers SO_x emissions by lowering the H₂S content of the vapor recovery gas. This is accomplished with a polar bond between the H₂S and the scrubber media. Once the H₂S is collected with the scrubber media it can then be recovered at the sulfur recovery plant.

Low-NO_x burners reduce NO_x formation by producing lower flame temperatures (and longer flames) than conventional burners. Conventional burners thoroughly mix all the fuel and air in a single stage just prior to combustion, whereas low-NO_x burners delay the mixing of fuel and air by introducing the fuel (or sometimes the air) in multiple stages. Generally, in the first combustion stage, the air-fuel mixture is fuel rich. In a fuel rich environment, all the oxygen will be consumed in reactions with the fuel, leaving no excess oxygen available to react with nitrogen to produce thermal NO_x. In the secondary and tertiary stages, the combustion zone is maintained in a fuel-lean environment. The excess air in these stages helps to reduce the flame temperature so that the reaction between the excess oxygen with nitrogen is minimized.

The PM10 control requirements of Rule 4320 will be met by scrubbing the field gas used as fuel (using sulfur scrubbers listed on permit C-1121-17) for a maximum of 9 ppmv for compliance with the sulfur limit of District Rule 4320.

After flare C-1121-168 is removed from its dormant status, it will be used for no more than 48 hours in a quarter to incinerate the gas that normally is incinerated by the four steam generators involved in this project when they are shut down for maintenance. The enclosed ground-level flares use a refractory-lined combustion chamber to eliminate visible flame during day-to-day operations. During incineration of the gas, the temperature of the process stream is increased from ambient to temperatures up to 1400°F with the assistance of staged burner system. This allows the combustion chamber to be maintained at its highest destruction efficiency under all operating conditions. The Zink thermal oxidizer flare (ZTOF) will operate with a destruction efficiency of at least 95%.

VII. General Calculations

A. Assumptions

Steam generators:

- There will be no change in current permitted emissions rates, daily and annual potential to emit for NO_x CO, VOC, or PM10
- There is a decrease in the SO_x emission rate to 9 ppmv @ 3%O₂
- F-Factor for Natural Gas: 8,578 dscf/MMBtu corrected to 60°F (40 CFR 60, Appendix B)
- Maximum Gas Flow rate from the steam generator 10,433 dscfm @ 3%O₂ (by calculation as shown below)
- Natural Gas Heating Value: 1,000 Btu/scf (District Practice)
- Fuel consumption for the steam generator shall not exceed 1,500 MMBtu/day.
- Combined waste gas consumption for the four steam generators (C-1121-17, -18, -19, & -41) shall not exceed 675,000 scf/day.
- Combined permitted pre-project SO_x emissions are 103,336 lb/yr
- Combined proposed post project SO_x emissions are 28,580 lb/yr:

$$\frac{8578 \text{ dscf}}{1 \text{ MMBtu}} \times \frac{62.5 \text{ MMBTU}}{\text{HR}} \times \frac{1 \text{ hr}}{60 \text{ Min}} \times \frac{20.9}{20.9 - 3.0} = 10,433 \text{ dscfm @ 3\%O}_2$$

Flare:

- There is no change to daily emissions
- Only Annual SO_x emissions are effected

B. Emission Factors

Pre-project:

Pre-Project Emission Factors (EF1), taken from the pre-project Authorities to Construct, are listed below:

C-1121-17-16:

Pre-Project Emission Factors (lb/MMBtu ppmv @ 3% O₂)					
Permit#	NOx	SOx	PM10	CO	VOC
C-1121-17-16	0.018	8.44	0.633	0.037	0.008
	15			50	
C-1121-18-16	0.0182	0.08	0.057	0.032	0.008
	15			43	
C-1121-19-16	0.0182	0.08	0.057	0.032	0.008
	15			43	
C-1121-41-16	0.0182	0.08	0.057	0.032	0.008
	15			43	

Pre-Project Daily Emissions Limit By Permit (lb/day)					
Permit#	NOx	SOx	PM10	CO	VOC
C-1121-17-16	54.0	573.8	53.5	48.0	12.0
C-1121-18-16	51.5	--	--	45.8	--
C-1121-19-16	51.5	--	--	45.8	--
C-1121-41-16	51.5	--	--	45.8	--

- Combined emissions of SOx, calculated as SO₂, from the steam generators and the flare (C-1121-17, -18, -19, -41, & -168) shall not exceed 103,336 pounds per year. [District Rule 2201] Y

Post-Project Emission Factors (EF2)

Post-Project Emission Factors (lb/MMBtu ppmv @ 3% O₂)					
Permit#	NOx	SOx	PM10	CO	VOC
For all SG Units	0.018	0.0152	0.0076	0.032	0.008
	15	9.0		43	

- Combined emissions of SO_x, calculated as SO₂, from the steam generators and the flare (C-1121-17, -18, -19, -41, & -168) shall not exceed 28,580 lb/yr. [District Rule 2201]

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Daily Pre-Project Potential to Emit (PE1)					
Permit #	NOx	SOx	PM10	CO	VOC
C-1121-17-16 ¹	27.0	573.8	53.5	48.0	12.0
C-1121-18-16	27.3	120	85.5	45.8	12.0
C-1121-19-16 ²	27.3	120	85.5	45.8	12.0
C-1121-41-16 ²	27.3	120	85.5	45.8	12.0

¹ SO_x, PM₁₀, and CO limited by maximum daily emissions permit condition

² CO limited by maximum daily emissions permit condition

Annual Pre-Project Potential to Emit (PE1)					
Permit #	NOx	SOx	PM10	CO	VOC
C-1121-17-16 ¹	9855	103,336	19,528	17,520	4380
C-1121-18-16	9965	43,800	31,208	16,717	4380
C-1121-19-16	9965	43,800	31,208	16,717	4380
C-1121-41-16	9965	43,800	31,208	16,717	4380
C-1121-168-9 ²	734	1802	86	3996	55

¹ Permit Units C-1121-17, -18, -19, -41, & -168 have a shared SO_x limiting condition of 103,336 pounds per year.

² From Project 1061688

2. Post-Project Potential to Emit (PE2)

Daily Post-Project Potential to Emit (PE2)					
Permit #	NOx	SOx	PM10	CO	VOC
For all Steam Generators	27	22.8	11.4	48	12

Annual Post-Project Potential to Emit (PE2)					
Permit #	NOx	SOx	PM10	CO	VOC
For all Steam Generators	9855	8322	4161	17,520	4380
C-1121-168-10	734	1802	86	3996	55

The emissions profiles are included in Appendix B.

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

SSPE1 calculations are necessary to aid the following determinations:

- > If the facility is becoming a new Major Source,
- > An offset threshold will be surpassed, or
- > A Stationary Source Increase in Permitted Emissions (SSIPE) public notice is triggered

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.

Since there is not an increase in potential emissions for any pollutant as a result of this project, the facility is not becoming a new Major source, an offset threshold will not be surpassed, nor will an SSIPE public notice be triggered. Therefore, the SSPE1 will not be calculated at this time.

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

SSPE2 calculations are necessary to aid the following determinations:

- > If the facility is becoming a new Major Source,
- > An offset threshold will be surpassed, or
- > An SSIPE public notice is triggered

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.

Since there is not an increase in potential emissions for any pollutant as a result of this project, the facility is not becoming a new Major source, an offset threshold will not be surpassed, nor will an SSIPE public notice be triggered. Therefore, the SSPE2 will not be calculated at this time.

5. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a major source is a stationary source a Post-Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the Major Source threshold values (excluding ERCs banked onsite that have not been used onsite).

In project C-1083501, Aera energy conceded that the source is an existing Major Source for all pollutants and will remain so after implementation of this project. No change in Major Source status is proposed or expected as a result of this portion of the stationary source project.

6. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed on a pollutant-by-pollutant basis to determine the amount of offsets required, where necessary, when the SSPE1 is greater than the offset threshold. This project is exempt from offsets pursuant to Rule 2201, Section 4.6.8. Therefore, BE calculations are not required.

7. SB 288 Major Modification

This facility is an existing major source for all air contaminants.

District Rule 2201 references the definition of SB 288 Major Modification provided in 40 CFR 51.165 (v)(A) in effect on December 19, 2002, where major modification means 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.

Significant is defined under Part 51.165(x) as a net emissions increase in the potential of a source to emit any affected pollutant equal to or exceeding any applicable thresholds. For existing major sources in the San Joaquin Valley Air Basin, which is non-attainment for ozone and PM₁₀, a major modification occurs if the Net Emissions Increases (NEI) is equal to or greater than one or more of the following threshold values when calculated on actual to PE basis:

VOC – 50,000 lb/year;
NO_x – 50,000 lb/year;
PM₁₀ – 30,000 lb/year; and
SO_x – 80,000 lb/year.

In project C-1083501 authorized Aera's steam generators to reduce NO_x emissions to 9 ppmv for Rule 4320 compliance. Because of the large number of affected units in project C-1083501 the applicant stipulates that the major modification threshold values are exceeded for VOC, NO_x, PM₁₀, and SO_x. This project authorizes the reduction of SO_x emission for Rule 4320; therefore, both projects are part of the same "EPA project".

This project is part of a major modification project and public notice is required.

8. Federal Major Modification

District Rule 2201, Section 3.17 states that Federal Major Modifications are the same as major modifications as define in 40 CFR 51.165 and part D of Title I of the CAA, unless they qualify for either a "Less-Than-Significant Emissions Increase" exclusion or a "Plantwide Applicability Limit" (PAL) exclusion.

A Less-Than-Significant Emissions Increase exclusion is for an emissions increase for the project, or a Net Emissions Increase for the project (as defined in 40 CFR 51.165 (a)(2)(ii)(B) through (D), and (F)), that is not significant for a given regulated NSR pollutant, and therefore is not a federal major modification for that pollutant.

- To determine the post-project projected actual emissions from existing units, the provisions of 40 CFR 51.165 (a)(1)(xxviii) shall be used.
- To determine the pre-project baseline actual emissions, the provisions of 40 CFR 51.165 (a)(1)(xxxv)(A) through (D) shall be used.
- If the project is determined not to be a federal major modification pursuant to the provisions of 40 CFR 51.165 (a)(2)(ii)(B), but there is a reasonable possibility that the project may result in a significant emissions increase, the owner or operator shall comply with all of the provisions of 40 CFR 51.165 (a)(6) and (a)(7).
- Emissions increases calculated pursuant to this section are significant if they exceed the significance thresholds specified in the table below.

Significant Threshold (lb/year)	
Pollutant	Threshold (lb/year)
VOC	50,000
NO _x	50,000
PM ₁₀	30,000
SO _x	80,000
PM _{2.5} *	20,000

* Although not specified in Rule 2201, this threshold applies under 51.165 per changes to Part 51 published in the Federal Register on May 16, 2008.

The Net Emissions Increases (NEI) will be calculated below to determine if this project has significant emission increases.

BAE = Baseline Actual Emissions. The actual emissions created by the project during the baseline period.

PAE = Projected Actual Emissions. The post-project projected emissions of the units in this project.

BPE = Baseline Potential Emissions. The portion of the unit's emissions following the project that an existing unit *could have accommodated* during the baseline period (as defined in 40 CFR 51.165 (a)(1)(xxviii)(B)-3), excluding any emissions unrelated to this particular project, including any increased utilization due to product demand growth.

$$\begin{aligned}\text{NEI} &= [\text{PAE} - (\text{BPE} - \text{BAE})] - \text{BAE} \\ &= \text{PAE} - \text{BPE} + \text{BAE} - \text{BAE} \\ &= \text{PAE} - \text{BPE}\end{aligned}$$

The subject modifications are solely for compliance with the emissions reduction requirements of District Rule 4320. No changes to the design capacity, fuel type and fuel usage rate are proposed and no increase in utilization is expected. Therefore, the projected actual emissions (PAE) cannot exceed the baseline actual emissions (BPE) and no significant emissions increases are expected.

$$\text{PAE} \leq \text{BPE}$$

And

$$\text{NEI} = \text{PAE} - \text{BPE} \leq 0$$

Since the BPE is equal to or greater than the PAE, the NEI for this project will be less than or equal to zero. Therefore, this project cannot exceed any Federal Major Modification threshold and no further discussion is necessary.

9. 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 is zero for all pollutants except NOx. The NOx QNEC shall be calculated as follows:

$$\text{QNEC} = \text{PE2} - \text{BE}, \text{ where:}$$

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.

PE2 = Post Project Potential to Emit for each emissions unit.

BE = Baseline Emissions (per Rule 2201) for each emissions unit.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE2 and quarterly BE can be calculated as follows:

SOx QNEC:

For the 62.5 MMBtu/hr steam generators lowering the SOx emissions to 9 ppmv:

Steam Generator C-1121-17:

$$\begin{aligned} \text{QNEC} &= [\text{PE2}_{\text{annual}} - \text{PE1}_{\text{annual}}] \div 4 \text{ quarters/year} \\ &= [8,322 \text{ lb} - 103,336 \text{ lb}] \div 4 \text{ quarters/year} = -23,754 \text{ lb-SOx/qtr} \end{aligned}$$

Steam Generator C-1121-18, '-19, & '-41:

$$\begin{aligned} \text{QNEC} &= [\text{PE2}_{\text{annual}} - \text{PE1}_{\text{annual}}] \div 4 \text{ quarters/year} \\ &= [8,322 \text{ lb} - 43,800 \text{ lb}] \div 4 \text{ quarters/year} = -8870 \text{ lb-SOx/qtr} \end{aligned}$$

Flare C-1121-168:

$$\begin{aligned} \text{QNEC} &= [\text{PE2}_{\text{annual}} - \text{PE1}_{\text{annual}}] \div 4 \text{ quarters/year} \\ &= [1,802 \text{ lb} - 1,802] \div 4 \text{ quarters/year} = 0 \text{ lb-SOx/qtr} \end{aligned}$$

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.

4.2.3 For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from Best Available Control Technology for all air pollutants, provided all of the following conditions are met:

4.2.3.1 There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design

- needed for the installation or modification of the emission control technique itself;
- 4.2.3.2 There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;
- 4.2.3.3 There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and
- 4.2.3.4 The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NO_x, or 25 tons per year of VOC, or 15 tons per year of SO_x, or 15 tons per year of PM₁₀, or 50 tons per year of CO.

Since each of the above-listed criteria are met, BACT is not triggered for any pollutant.

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 proposed modifications are solely for compliance with Rule 4320, and are exempt from offsets if the following criteria are satisfied. Rule 2201, Section 4.6.8 provides the following exemption from offsets.

Emission offsets shall not be required for the following:

- 4.6.8 For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from offset requirements for all air pollutants provided all of the following conditions are met:
 - 4.6.8.1 There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;
 - 4.6.8.2 There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;

4.6.8.3 There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and

4.6.8.4 The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NO_x, or 25 tons per year of VOC, or 15 tons per year of SO_x, or 15 tons per year of PM-10, or 50 tons per year of CO.

Since the above-listed criteria are met, offsets are not triggered for any pollutant.

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. SB 288 and Federal 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. SB 288 Major Modification and Federal Major Modification

As demonstrated in VII.C.7, this project constitutes a SB 288 Major Modification; therefore, public noticing for SB 288 Major Modification purposes is required.

As demonstrated in VII.C.8, this project does not constitute a Federal Major Modification; therefore, public noticing for Federal 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. As seen in Section VII.C.2 above, this project does not include a

new emissions unit which has daily emissions greater than 100 lb/day for any pollutant; therefore public noticing for PE > 100 lb/day purposes is not required.

d. Offset Threshold

Public notification is required if the Pre-Project Stationary Source Potential to Emit (SSPE1) is increased from a level below the offset threshold to a level exceeding the emissions offset threshold, for any pollutant.

There is no increase in permitted emissions as a result of this project. Therefore, the SSPE is not increasing with this project and an offset threshold cannot be surpassed as a result of this project. A public notice will not be required for offset threshold 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.

There is no increase in permitted emissions as a result of this project. As a result, SSIPE is not increasing with this project. Therefore, the SSIPE is zero for all pollutants and public notice will not be required for SSIPE purposes.

2. Public Notice Action

As discussed above, the project is a major modification and public notice will be required.

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.

Proposed Rule 2201 (DEL) Conditions:

Steam Generator C-1121-17-24:

- Emission rates shall not exceed any of the following limits: NOx (as NO2): 15 ppmv @ 3% O2 or 0.018 lb/MMBtu (27.0 lb/day), CO: 43 ppmv @ 3%O2 or 0.032 lb/MMBtu (48.0 lb/day), PM10: 0.0076 lb/MMBtu (11.4 lb-PM10/day), or VOC: 0.008 lb/MMBtu (12.0 lb/day). [District Rule 2201, 4201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

- When fired on PUC quality natural gas, the SOx emissions rate shall not exceed 0.00285 lb/MMBtu.
- When fired on gases other than PUC quality natural gas, the SOx emissions rate shall not exceed 9.0 ppmv @ 3% O2 or 0.0152 lb/MMBtu (22.8 lb/day).

Steam Generator C-1121-18-24:

- Emission rates shall not exceed any of the following limits: NOx (as NO2): 15 ppmv @ 3% O2 or 0.018 lb/MMBtu (27.0 lb/day), CO: 43 ppmv @ 3%O2 or 0.032 lb/MMBtu (48.0 lb/day), PM10: 0.0076 lb/MMBtu (11.4 lb-PM10/day), or VOC: 0.008 lb/MMBtu (12.0 lb/day).
- When fired on PUC quality natural gas, the SOx emissions rate shall not exceed 0.00285 lb/MMBtu.
- When fired on gases other than PUC quality natural gas, the SOx emissions rate shall not exceed 9.0 ppmv @ 3% O2 or 0.0152 lb/MMBtu (22.8 lb/day).

Steam Generator C-1121-19-24:

- Emission rates shall not exceed any of the following limits: NOx (as NO2): 15 ppmv @ 3% O2 or 0.018 lb/MMBtu (27.0 lb/day), CO: 43 ppmv @ 3%O2 or 0.032 lb/MMBtu (48.0 lb/day), PM10: 0.0076 lb/MMBtu (11.4 lb-PM10/day), or VOC: 0.008 lb/MMBtu (12.0 lb/day). [District Rule 2201, 4201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
- When fired on PUC quality natural gas, the SOx emissions rate shall not exceed 0.00285 lb/MMBtu.
- When fired on gases other than PUC quality natural gas, the SOx emissions rate shall not exceed 9.0 ppmv @ 3% O2 or 0.0152 lb/MMBtu (22.8 lb/day).

Steam Generator C-1121-41-24:

- Emission rates shall not exceed any of the following limits: NOx (as NO2): 15 ppmv @ 3% O2 or 0.018 lb/MMBtu (27.0 lb/day), CO: 43 ppmv @ 3%O2 or 0.032 lb/MMBtu (48.0 lb/day), PM10: 0.0076 lb/MMBtu (11.4 lb-PM10/day), or VOC: 0.008 lb/MMBtu (12.0 lb/day). [District Rule 2201, 4201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
- When fired on PUC quality natural gas, the SOx emissions rate shall not exceed 0.00285 lb/MMBtu.
- When fired on gases other than PUC quality natural gas, the SOx emissions rate shall not exceed 9.0 ppmv @ 3% O2 or 0.0152 lb/MMBtu (22.8 lb/day).

E. Compliance Assurance

1. Source Testing

The units are subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters, Phase II*, and District Rule 4306, *Phase III* and District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators,*

and Process Heaters greater than 5 MMBtu/hr. Source testing requirements, in accordance with District Rules 4305, 4306, and 4320 will be discussed in Section VIII, *District Rules 4305, 4306 and 4320* of this evaluation.

2. Monitoring

As required by District Rules 4305, 4306 and 4320, *Boilers, Steam Generators and Process Heaters*, the units are subject to NOx monitoring requirements. NOx Monitoring requirements, in accordance with District Rules 4305, 4306 and 4320, will be discussed in Section VIII of this evaluation.

The following monitoring conditions will be placed on the ATC to ensure compliance with the DEL:

- Sulfur content shall be determined on a daily basis by gas detector tube sampling. [District Rule 2201] Y
- The sulfur content and higher heating value of the treated waste gas exiting the H2S Scavenger System shall be determined on a bi-annual basis using grab sample analysis by GC-FPD/TCD performed in the laboratory and EPA Method 19. [District Rule 2201] Y
- Daily SOx emissions from combustion of waste gas shall be calculated based on the waste gas sulfur content as determined by gas detector tube sampling or the most recent laboratory analysis, whichever is greater. [District Rule 2201] Y
- When source or type of gas changes, sampling for sulfur content shall be conducted within one week. A change in fuel type is defined as changing between any of the following: PUC-Quality gas, unprocessed field gas, or any field gas with any specific level of pretreatment. [District Rule 2520, 9.3.2] Y
- When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.4.2] Y
- When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6C, EPA Method 8, or ARB Method 100. [District Rule 2201, 2520, 9.4.2, 4320] Y

- If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.4.2 and 4320] Y
- The concentration of sulfur compounds in the exhaust from this unit shall demonstrate compliance using one of the following: fire the unit only on PUC or FERC regulated natural gas or test the sulfur content of each fuel source or determine that the concentration of sulfur compounds in the exhaust does not exceed the concentration limit by a combination of source testing and fuel analysis. [District Rules 2520, 9.4.2, 4301, 5.2.1 and Rule 4801, 3.1] Y

3. Record keeping

As required by District Rules 4305, 4306 and 4320, *Boilers, Steam Generators and Process Heaters*, these units are subject to recordkeeping requirements. Recordkeeping requirements, in accordance with District Rules 4305, 4306 and 4320, will be discussed in Section VIII of this evaluation.

The following condition will be listed on the permits:

- Permittee shall maintain daily record of all natural gas consumption including waste gas consumption, fuel sulfur content, calculated SO_x emissions, supplier certifications and test results to show compliance with the conditions of this permit. The operator shall record daily amount and type (s) of fuel(s) combusted and all dates on which unit is fired on any non certified fuel and record specific type(s) of non certified fuel used. [District Rule 1070 and District Rule 2520, section 9.4.2] Y
- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

District Rule 2520 Federally Mandated Operating Permits

Aera Energy, LLC's Fresno Heavy Oil Western stationary source has a Title V permit. Section 3.20.2 states that a minor permit modifications "Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions". This District project is part of a single stationary source project consisting of multiple District projects that request modification of Aera Energy's steam generator permits for Rule 4320 compliance. Some of the modifications to the steam generators, within the stationary source project, resulted in relaxed monitoring

conditions. As a result, the proposed project constitutes a Significant Modification to the Title V Permit pursuant to Section 3.29.

Rule 4001 - New Source Performance Standards (NSPS)

Subpart Dc applies to steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 100 million Btu per hour or less, but greater than or equal to 10 million Btu per hour. Subpart Dc has no emission requirements for gas-fired units. Therefore Subpart Dc does not apply.

Rule 4101 Visible Emissions

District Rule 4101, Section 5.0, indicates that 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 dark or darker than Ringlemann 1 or equivalent to 20% opacity.

Gas-fired equipment typically operates without visible emissions

Compliance with District Rule 4101 is expected.

Rule 4102 - Nuisance

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

A permit condition will be listed on the permits as follows:

- {98} No air contaminant shall be released into the atmosphere, which causes a public nuisance. [District Rule 4102]

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.

As demonstrated above, there are no increases in emissions associated with this project, therefore a health risk assessment is not necessary and no further risk analysis is required.

District 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. As

natural gas-fired combustion equipment emits negligible amounts of particulate matter, compliance with this rule is expected.

District Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO₂, NO₂, 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.

The existing emission rates for the affected combustion equipment are less than the limits allowed by this rule and are unchanged with this application except for NO_x. However, NO_x emissions are decreasing; therefore continued compliance is expected.

District Rule 4304 - Equipment Tuning Procedure for Boilers, Steam Generators and Process Heaters

Pursuant to District Rules 4305 and 4306, Section 6.3.1, the steam generator is not required to tune since it follows a District approved Alternate Monitoring scheme where the applicable emission limits are periodically monitored. Therefore, the units are not subject to this rule.

District Rule 4305 Boilers, Steam Generators and Process Heaters – Phase 2

This rule limits NO_x and CO emissions from boilers, steam generators, and process heaters rated greater than 5 MMBtu/hr. The proposed units comply with the applicable provisions of this rule. Source testing, monitoring and recordkeeping requirements of Rule 4320 are equal to or more stringent than the requirements of this rule; therefore, compliance with Rule 4306 requirements will satisfy requirements of District Rule 4305.

District Rule 4306 Boilers, Steam Generators and Process Heaters – Phase 3

This rule limits NO_x and CO emissions from boilers, steam generators, and process heaters rated greater than 5 MMBtu/hr. The units are subject to Rule 4320 which is equal to or more stringent than the requirements of this rule; therefore, compliance with Rule 4320 requirements will satisfy requirements of District Rule 4306. Compliance with District Rule 4306 is expected.

District Rule 4320 Advance Emission Reduction Options for Boilers, Steam Generators and Process Heaters Greater than 5 MMBtu/hr

This rule limits NO_x, CO, SO₂ and PM₁₀ emissions from boilers, steam generators and process heaters rated greater than 5 MMBtu/hr. This rule also provides a compliance option of payment of fees in proportion to the actual amount of NO_x emitted over the previous year.

The units in this project are all rated at greater than 5 MMBtu/hr heat input; however, Area energy has requested that only the PM₁₀ requirements of the rule be addressed at this

time. Therefore, in the future, Aera energy will submit additional ATCs to bring the units into compliance with the NOx requirements of this Rule.

Section 5.4 Particulate Matter Control Requirements

Section 5.4.1 states that to limit particulate matter emissions, an operator shall comply with one of the options listed in the following requirements:

- Section 5.4.1.1 provides option for the operator to comply with the rule by firing the unit exclusively on PUC-quality natural gas, commercial propane, butane, or LPG, or a combination of such gases.
- Section 5.4.1.1 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall fire units exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases;
- Section 5.4.1.2 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet; or
- Section 5.4.1.3 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall install and properly operate an emission control system that reduces SO₂ emissions by at least 95% by weight; or limit exhaust SO₂ to less than or equal to 9 ppmv corrected to 3.0% O₂.

The units that utilize scrubbed waste gas will limiting exhaust SO₂ to less than or equal to 9 ppmv corrected to 3.0% O₂.

Section 5.7.6 Monitoring SOx Emissions

Operators complying with Section 5.4.1.3 shall perform an annual source test unless a more frequent sampling and reporting period is included in the Permit to Operate. Therefore the following conditions will be placed on the ATC:

- Within 60 days of startup and at least once every 12 months thereafter, unit shall be stack tested to demonstrate compliance with the SOx emission limit required by this permit (ppmv @3 % O₂) using EPA Method 6C, Method 8 or ARB Method 100. Stack testing for SOx emissions in not required if unit was fired only on PUC quality natural during the 12 months prior to the compliance testing anniversary date.
- Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for

approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

Section 5.8 Compliance Determination

Section 5.8.2 requires that all emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0. Therefore, the following permit condition will be listed on the ATCs as follows:

- All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306 and 4320]

Section 5.8.5 requires that for emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation of this rule, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply. If two (2) of three (3) runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. Therefore, the following permit condition will be listed on the permit as follows:

- For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320]

Section 6.1 Recordkeeping

Section 6.1 requires that the records required by Sections 6.1.1 through 6.1.5 shall be maintained for five calendar years and shall be made available to the APCO and EPA upon request. Failure to maintain records or information contained in the records that demonstrate noncompliance with the applicable requirements of this rule shall constitute a violation of this rule.

Aera will keep records as required by the rule (monitoring and testing).

Section 6.2, Test Methods

Section 6.2 identifies test methods to be used when determining compliance with the rule. The following existing permit conditions will be retained on the ATCs:

- {109} Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
- The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, stack gas moisture content - EPA Method 4, stack gas velocities - EPA Method 2, and fuel gas sulfur content - ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H2S and mercaptans. [District Rules 4305, 4306 and 4320]

Section 6.4 Emission Control Plan (ECP)

Section 6.4 requires the operator of any unit to submit to APCO for approval an Emissions Control Plan no later than January 1, 2010. Compliance with this section of the rule is expected.

Conclusion

Conditions will be incorporated into the ATCs in order to ensure compliance with the PM₁₀ requirements of this rule, see attached draft ATCs. Therefore, compliance with District Rule 4320 requirements is expected.

District 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 SO₂, on a dry basis averaged over 15 consecutive minutes.

$$9 \text{ ppmv} \times \frac{20.9}{20.9 - 3} = 10.5 \frac{\text{parts}}{\text{million}}$$

$$\text{Sulfur Concentration} = 10.5 \frac{\text{parts}}{\text{million}} < 2,000 \text{ ppmv (or 0.2\%)}$$

Therefore, compliance with District Rule 4801 requirements is expected.

California Health & Safety Code 42301.6 (School Notice)

The emissions units are not located within 1000 feet of the outer boundary of any K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

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.

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

Aera Energy has proposed identifying the source of the waste gases authorized to be combusted by the steam generators and the flare (C-1121-168) by adding wording to the shared limiting condition on the permits:

- Combined exhaust gases combusted within steam generators '-17, '-18, '-19, and '-41, from the four CVR systems (C-1121-38, -39, -114, & -116) and the section 32 TVR system shall not exceed 675,000 scf/day. [District NSR Rule] Federally Enforceable Through Title V Permit

Aera Energy has proposed to lower the shared annual SOx emissions from the four steam generators and the flare (C-1121-168) from 103,336 lb/yr to 28,580 lb/yr:

- Combined emissions of SOx, calculated as SO₂, from the steam generators and the flare (C-1121-17, -18, -19, -41, & -168) shall not exceed 28,580 lb/yr. [District Rule 2201]

Compliance with all applicable rules and regulations is expected. Issue the Authorities to Construct subject to the permit conditions on the attached draft Authorities to Construct in Appendix C.

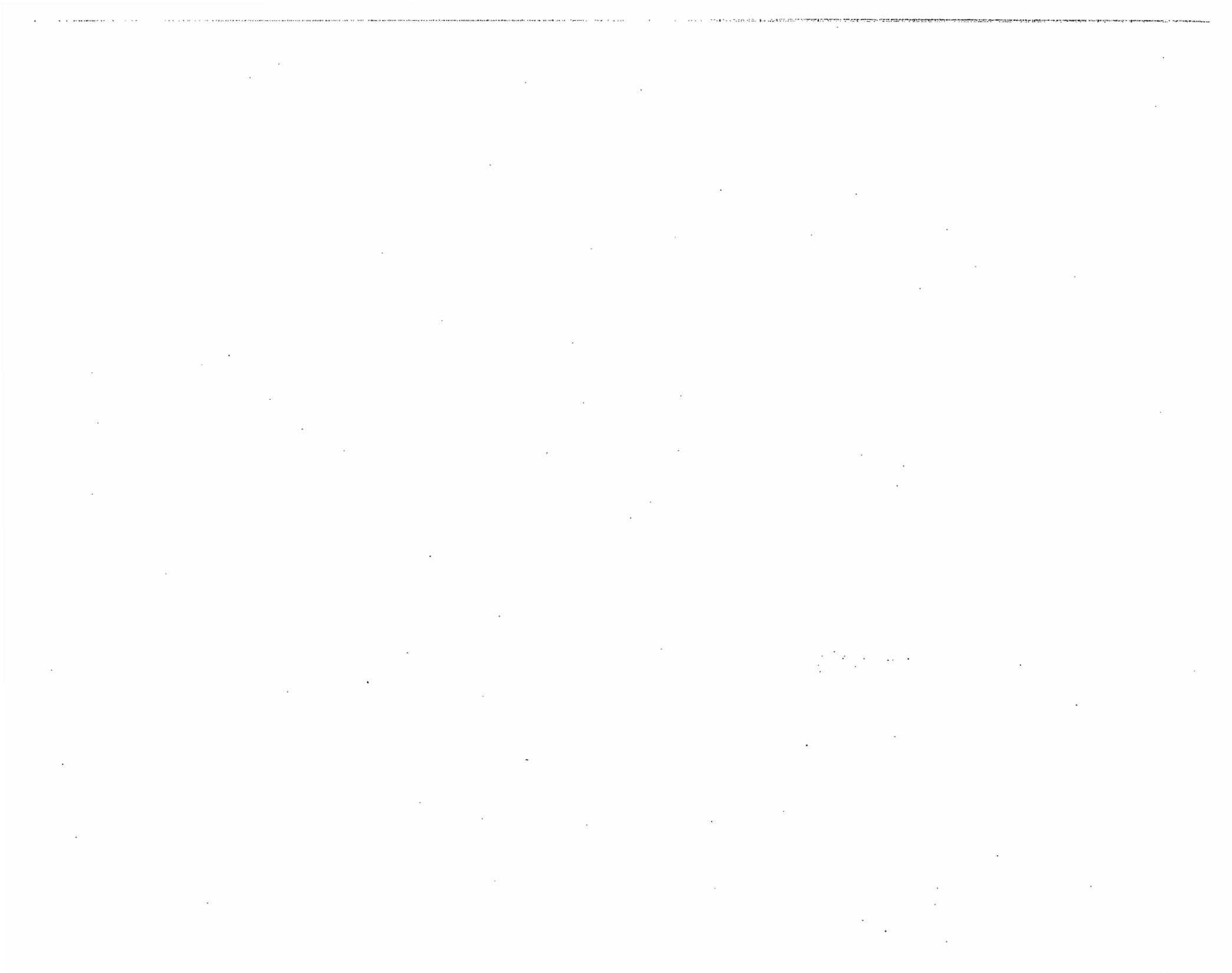
X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
C-1121-17-24	3020-02-H	Greater than 15 MMBtu/hr (62.5 MMBtu/hr)	\$1030.00
C-1121-18-24	3020-02-H	Greater than 15 MMBtu/hr (62.5 MMBtu/hr)	\$1030.00
C-1121-19-24	3020-02-H	Greater than 15 MMBtu/hr (62.5 MMBtu/hr)	\$1030.00
C-112141-24	3020-02-H	Greater than 15 MMBtu/hr (62.5 MMBtu/hr)	\$1030.00

Appendices

- A: Pre-project permits
- B: Emissions Profiles
- C: Draft ATCs

APPENDIX A
Pre-project permits



San Joaquin Valley Air Pollution Control District

PERMIT UNIT: C-1121-17-16

EXPIRATION DATE: 12/31/2006

SECTION: 26 **TOWNSHIP:** 19S **RANGE:** 15E

EQUIPMENT DESCRIPTION:

SG S-9, 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR WITH COEN QLN ULN BURNER AND FLUE GAS RECIRCULATION SERVED BY LO-COST H2S SCAVENGER SYSTEM SHARED WITH PERMIT UNITS C-1121-18, '-19 AND '-41

PERMIT UNIT REQUIREMENTS

1. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
2. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
3. This unit commenced construction, modification, or reconstruction prior to June 19, 1984. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
4. Only natural gas, vapor recovery gas, or a combination of natural gas and vapor recovery gas shall be used as fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Lo-Cost H2S scavenging system shall be used whenever vapor recovery gas is fired in this unit. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Fuel consumption for the steam generator shall not exceed 1,500 MMBtu/day. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Combined waste gas consumption for the four steam generators (C-1121-17, -18, -19, & -41) shall not exceed 675,000 scf/day. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Permittee shall maintain daily record of all natural gas consumption including waste gas consumption, fuel sulfur content, calculated SOx emissions, supplier certifications and test results to show compliance with the conditions of this permit. The operator shall record daily amount and type (s) of fuel(s) combusted and all dates on which unit is fired on any non certified fuel and record specific type(s) of non certified fuel used. [District Rule 1070 and District Rule 2520, section 9.4.2] Federally Enforceable Through Title V Permit
9. Emissions from the steam generator shall not exceed any of the following limits: 53.5 lb-PM10/day, 573.8 lb-SOx/day calculated as SO2; 54.0 lb-NOx/day calculated as NO2, 12.0 lb-VOC/day, or 48.0 lb-CO/day. [District Rule 2201, Rule 4201, 3.1, Rule 4301, 5.1, 5.2 and 4305, 5.1, 5.3] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
These terms and conditions are part of the Facility-wide Permit to Operate.

10. When fired only on natural gas, emissions from the steam generator shall not exceed any of the following limits: 0.0076 lb-PM10/MMBtu; 0.00285 lb-SO_x/MMBtu calculated as SO₂; 0.018 lb-NO_x/MMBtu calculated as NO₂ @ 3% O₂ or 15 ppmv @ 3% O₂; 0.008 lb-VOC/MMBtu, or 50 ppmv CO @ 3% O₂. [District Rule 2201, Rule 4201, 3.1, Rule 4301, 5.1, 5.2 and 4305, 5.1, 5.3] Federally Enforceable Through Title V Permit
11. When fired only on waste gas, emissions rates from the steam generator shall not exceed any of the following limits: 15 ppmv NO_x @ 3% O₂ or 0.018 lb-NO_x/MMBtu, 8.44 lb SO_x/MMBtu, 0.633 lb-PM10/MMBtu, 50 ppmv CO @ 3% O₂, or 0.008 lb-VOC/MMBtu. [District Rule 2201, Rule 4201, 3.1, Rule 4301, 5.1, 5.2 and 4305, 5.1, 5.3] Federally Enforceable Through Title V Permit
12. Combined emissions of SO_x, calculated as SO₂, from the steam generators and the flare (C-1121-17, -18, -19, -41, & -168) shall not exceed 103,336 pounds per year. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The sulfur content of treated waste gas exiting the H₂S Scavenger System shall not exceed 5000 ppmv. Sulfur content shall be determined on a daily basis by gas detector tube sampling. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The sulfur content and higher heating value of the treated waste gas exiting the H₂S Scavenger System shall be determined on a bi-annual basis using grab sample analysis by GC-FPD/TCD performed in the laboratory and EPA Method 19. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Daily SO_x emissions from combustion of waste gas shall be calculated based on the waste gas sulfur content as determined by gas detector tube sampling or the most recent laboratory analysis, whichever is greater. [District Rule 2201] Federally Enforceable Through Title V Permit
16. When source or type of gas changes, sampling for sulfur content shall be conducted within one week. A change in fuel type is defined as changing between any of the following: PUC-Quality gas, unprocessed field gas, or any field gas with any specific level of pretreatment. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
17. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
18. When complying with SO_x emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6, ARB Method 100 or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by GC-FPD/TCD performed in the laboratory and EPA Method 19 to calculate emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months; however, annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
19. If the unit is fired on noncertified gaseous fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
20. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.4.2 and 4305, 6.2.1] Federally Enforceable Through Title V Permit
21. The concentration of sulfur compounds in the exhaust from this unit shall demonstrate compliance using one of the following: fire the unit only on PUC or FERC regulated natural gas or test the sulfur content of each fuel source or determine that the concentration of sulfur compounds in the exhaust does not exceed the concentration limit by a combination of source testing and fuel analysis. [District Rule 2520, 9.4.2, 4301, 5.2.1 and Rule 4801, 3.1] Federally Enforceable Through Title V Permit
22. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

23. Subject to the definitions and requirements of Section 5.3, District Rule 4306, emission factor limitations of this permit shall not apply during periods of startup, shutdown, or refractory curing. Duration of startup and shutdown shall not exceed 2 hours each per occurrence. Refractory curing period is defined as a maintenance-based reduced-load period of time during which a unit is brought from a shutdown status to staged rates of firing for the sole purpose of curing new refractory lining in the heat exchanger section of the unit, and shall not exceed 30 hours per occurrence. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
24. Records of the duration of any startup, shutdown, or any refractory curing shall be maintained. [District Rule 4305 and 4306] Federally Enforceable Through Title V Permit
25. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
26. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
27. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
28. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
29. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
30. This unit shall be tested for compliance with the NO_x and CO emissions limits at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, and 4306] Federally Enforceable Through Title V Permit
31. The source plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
32. Source testing to measure NO_x, and CO emissions shall be conducted within 60 days of initial start-up of this unit fired on natural gas, with unit in operational conditions. [District Rules 2201, 4305 and 4306] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

33. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
34. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
35. CO emissions for source test purposes shall be determined using EPA Method 10 or EPA Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
36. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
37. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
38. NOx, and CO emissions shall be measured with annual source testing conducted by independent testing laboratory with sample collection by ARB certified testing laboratory and shall be witnessed or authorized by the District. [District Rule 1081, 3.0, 4.0 and Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
39. Emissions for this unit shall be calculated using the arithmetic mean, pursuant to District Rule 1081 (Amended December 16, 1993), of 3 thirty-minute test runs for NOx and CO. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
40. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
41. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306]

These terms and conditions are part of the Facility-wide Permit to Operate.

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: C-1121-18-16

EXPIRATION DATE: 12/31/2006

SECTION: 29 TOWNSHIP: 19S RANGE: 15E

EQUIPMENT DESCRIPTION:

SG S-10, 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR WITH A COEN QLN-ULN LOW NOX BURNER, AND A FLUE GAS RECIRCULATION (FGR) SYSTEM SERVED BY LO-COST H2S SCAVENGER SYSTEM SHARED WITH PERMIT UNITS C-1121-17, '19 AND '41

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
2. Fuel consumption shall not exceed 1,430,000 scf/day of natural gas. [District NSR Rule] Federally Enforceable Through Title V Permit
3. Only natural gas, vapor recovery gas, or a combination of natural gas and vapor recovery gas shall be used as fuel. [District NSR Rule] Federally Enforceable Through Title V Permit
4. Combined exhaust gases combusted within this steam generator, from the four CVR systems (C-1121-38, -39, -114, & -116) and the section 32 TVR system shall not exceed 1,350,000 scf/day. [District NSR Rule] Federally Enforceable Through Title V Permit
5. Lo-Cost H2S scavenging system shall be used whenever vapor recovery gas is fired in this unit. [District NSR Rule] Federally Enforceable Through Title V Permit
6. The sulfur content of treated waste gas exiting the H2S Scavenger System shall be determined on a daily basis by gas detector tube sampling. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The sulfur content and higher heating value of the treated waste gas exiting the H2S Scavenger System shall be determined on a bi-annual basis using double GC for H2S and mercaptans performed in the laboratory and EPA Method 19. [District NSR Rule] Federally Enforceable Through Title V Permit
8. Daily SOx emissions from combustion of waste gas shall be calculated based on the waste gas sulfur content as determined by gas detector tube sampling or the most recent laboratory analysis, whichever is greater. [District NSR Rule] Federally Enforceable Through Title V Permit
9. Duration of refractory curing shall not exceed 30 hours each per occurrence. Permittee shall notify the District in writing prior to refractory curing. [District Rule 2080] Federally Enforceable Through Title V Permit
10. Emission rates during refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO2; sulfur - 200 pounds of SO2 per hour, or 2000 ppmv as SO2, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO2 - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, and 4801] Federally Enforceable Through Title V Permit
11. Start-up is 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 operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4306, 3.25 and 3.22] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 4305, 5.5.6 and 4306, 5.3] Federally Enforceable Through Title V Permit
13. Emissions from the natural gas/vapor recovery gas-fired steam generator shall not exceed any of the following limits: 0.08 lb-SO_x/MMBtu, 0.057 lb-PM₁₀/MMBtu, or 0.008 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Except during start-up and shutdown periods and refractory curing, emissions from the natural gas/vapor recovery gas-fired steam generator shall not exceed any of the following limits: 15 ppmvd NO_x @ 3% O₂ or 0.0182 lb-NO_x/MMBtu or 43 ppmvd CO @ 3% O₂ or 0.032 lb-CO/MMBtu. [District Rules 2201, 4301, 5.2, 4305, 5.1, 4306, 5.1, and 4351, 5.1] Federally Enforceable Through Title V Permit
15. During start-up and shutdown periods, emissions from the natural gas/vapor recovery gas-fired steam generator shall not exceed either of the following limits: 0.1 lb-NO_x/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Emissions from the natural gas/vapor recovery gas-fired steam generator shall not exceed either of the following limits: 51.5 lb-NO_x/day or 45.8 lb-CO/day. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months, (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months, (no more than 30 days before or after the required 36 months source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 6.3.1, 4306, 6.3.1, and 4351, 6.3.1] Federally Enforceable Through Title V Permit
18. 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
19. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 5.5.1 and 4306, 5.5.1] Federally Enforceable Through Title V Permit
20. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 5.5.2 and 4306, 5.5.2] Federally Enforceable Through Title V Permit
21. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 5.5.5 and 4306, 5.5.5] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, stack gas moisture content - EPA Method 4, stack gas velocities - EPA Method 2, and fuel gas sulfur content - ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H₂S and mercaptans. [District Rules 1081, 4305, 4306, 6.2, and 4351] Federally Enforceable Through Title V Permit
24. If the steam generator is fired on PUC-regulated natural gas, then the permittee shall maintain on file copies of all natural gas bills or fuel throughput records for a period of five years. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
These terms and conditions are part of the Facility-wide Permit to Operate.

25. If the steam generator is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the engine shall be determined using ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H₂S and mercaptans. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
26. If the steam generator is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
27. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 5.4 and 4306, 5.4] Federally Enforceable Through Title V Permit
28. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
29. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
30. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
31. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 4201 (Last Amended December 17, 1992), 4301 (Last Amended December 17, 1992), 4406 (Amended December 17, 1992), and 4801 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
32. This unit commenced construction, modification, or reconstruction prior to June 19, 1984. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
33. Permittee shall maintain daily record of all natural gas consumption including waste gas consumption, fuel sulfur content, calculated SO_x emissions, supplier certifications and test results to show compliance with the conditions of this permit. The operator shall record daily amount and type (s) of fuel(s) combusted and all dates on which unit is fired on any non certified fuel and record specific type(s) of non certified fuel used. [District Rule 1070 and District Rule 2520, section 9.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
These terms and conditions are part of the Facility-wide Permit to Operate.

34. Permittee shall maintain records of duration of each start-up, shutdown, and refractory curing, per a period of five years and make such records readily available for District inspection upon request. [District Rules 2080 and 4306] Federally Enforceable Through Title V Permit
35. All records shall be maintained and retained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 6.1, and 4306, 6.1] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: C-1121-19-16

EXPIRATION DATE: 12/31/2006

SECTION: 29 **TOWNSHIP:** 19S **RANGE:** 15E

EQUIPMENT DESCRIPTION:

SG S-11, 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR WITH A COEN QLN-ULN LOW NOX BURNER AND A FLUE GAS RECIRCULATION (FGR) SYSTEM SERVED BY LO-COST H2S SCAVENGER SYSTEM SHARED WITH PERMIT UNITS C-1121-17, '-18 AND '-41

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
2. Fuel consumption shall not exceed 1,430,000 scf/day of natural gas. [District NSR Rule] Federally Enforceable Through Title V Permit
3. Only natural gas, vapor recovery gas, or a combination of natural gas and vapor recovery gas shall be used as fuel. [District NSR Rule] Federally Enforceable Through Title V Permit
4. Combined exhaust gases combusted within this steam generator, from the four CVR systems (C-1121-38, -39, -114, & -116) and the section 32 TVR system shall not exceed 1,350,000 scf/day. [District NSR Rule] Federally Enforceable Through Title V Permit
5. Lo-Cost H2S scavenging system shall be used whenever vapor recovery gas is fired in this unit. [District NSR Rule] Federally Enforceable Through Title V Permit
6. The sulfur content of treated waste gas exiting the H2S Scavenger System shall be determined on a daily basis by gas detector tube sampling. [District NSR Rule] Federally Enforceable Through Title V Permit
7. The sulfur content and higher heating value of the treated waste gas exiting the H2S Scavenger System shall be determined on a bi-annual basis using double GC for H2S and mercaptans performed in the laboratory and EPA Method 19. [District NSR Rule] Federally Enforceable Through Title V Permit
8. Daily SOx emissions from combustion of waste gas shall be calculated based on the waste gas sulfur content as determined by gas detector tube sampling or the most recent laboratory analysis, whichever is greater. [District NSR Rule] Federally Enforceable Through Title V Permit
9. Duration of refractory curing shall not exceed 30 hours each per occurrence. Permittee shall notify the District in writing prior to refractory curing. [District Rule 2080] Federally Enforceable Through Title V Permit
10. Emission rates during refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO2; sulfur - 200 pounds of SO2 per hour, or 2000 ppmv as SO2, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO2 - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, and 4801] Federally Enforceable Through Title V Permit
11. Start-up is 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 operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4306, 3.25 and 3.22] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 4305, 5.5.6 and 4306, 5.3] Federally Enforceable Through Title V Permit
13. Emissions from the natural gas/vapor recovery gas-fired steam generator shall not exceed any of the following limits: 0.08 lb-SO_x/MMBtu, 0.057 lb-PM₁₀/MMBtu, or 0.008 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Except during start-up and shutdown periods and refractory curing, emissions from the natural gas/vapor recovery gas-fired steam generator shall not exceed any of the following limits: 15 ppmvd NO_x @ 3% O₂ or 0.0182 lb-NO_x/MMBtu or 43 ppmvd CO @ 3% O₂ or 0.032 lb-CO/MMBtu. [District Rules 2201, 4301, 5.2, 4305, 5.1, 4306, 5.1, and 4351, 5.1] Federally Enforceable Through Title V Permit
15. During start-up and shutdown periods, emissions from the natural gas/vapor recovery gas-fired steam generator shall not exceed either of the following limits: 0.1 lb-NO_x/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Emissions from the natural gas/vapor recovery gas-fired steam generator shall not exceed either of the following limits: 51.5 lb-NO_x/day or 45.8 lb-CO/day. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months, (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months, (no more than 30 days before or after the required 36 months source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 6.3.1, 4306, 6.3.1, and 4351, 6.3.1] Federally Enforceable Through Title V Permit
18. 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
19. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 5.5.1 and 4306, 5.5.1] Federally Enforceable Through Title V Permit
20. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 5.5.2 and 4306, 5.5.2] Federally Enforceable Through Title V Permit
21. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 5.5.5 and 4306, 5.5.5] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, stack gas moisture content - EPA Method 4, stack gas velocities - EPA Method 2, and fuel gas sulfur content - ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H₂S and mercaptans. [District Rules 1081, 4305, 4306, 6.2, and 4351] Federally Enforceable Through Title V Permit
24. If the steam generator is fired on PUC-regulated natural gas, then the permittee shall maintain on file copies of all natural gas bills or fuel throughput records for a period of five years. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
These terms and conditions are part of the Facility-wide Permit to Operate.

25. If the steam generator is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the engine shall be determined using ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H₂S and mercaptans. [District Rule 2520, 9.3.2]] Federally Enforceable Through Title V Permit
26. If the steam generator is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
27. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 5.4 and 4306, 5.4] Federally Enforceable Through Title V Permit
28. If periodic determination of FGR rate by O₂ measurement or if monitoring of burner mechanical adjustments and O₂ concentration are utilized during the 36-month source testing interval, the owner/operator shall have unit tuned at least twice each calendar year, from four to eight months apart, in which it operates, by a technician that is qualified, to the satisfaction of the APCO, in accordance with the procedure described in Rule 4304 (Equipment Tuning Procedure for Boilers, Steam Generators, and Process Heaters). [District Rule 4306] Federally Enforceable Through Title V Permit
29. If periodic determination of FGR rate by O₂ measurement or if monitoring of burner mechanical adjustments and O₂ concentration are utilized, and if the unit does not operate throughout a continuous six-month period within a calendar year, only one tune-up is required for that calendar year. No tune-up is required for any unit that is not operated during that calendar year; this unit may be test fired to verify availability of the unit for its intended use, but once the test firing is completed the unit shall be shutdown. [District Rule 4306] Federally Enforceable Through Title V Permit
30. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
31. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
32. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
33. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 4201 (Last Amended December 17, 1992), 4301 (Last Amended December 17, 1992), 4406 (Amended December 17, 1992), and 4801 (Amended December 17, 1992). 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
These terms and conditions are part of the Facility-wide Permit to Operate.

34. This unit commenced construction, modification, or reconstruction prior to June 19, 1984. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
35. Permittee shall maintain daily record of all natural gas consumption including waste gas consumption, fuel sulfur content, calculated SOx emissions, supplier certifications and test results to show compliance with the conditions of this permit. The operator shall record daily amount and type (s) of fuel(s) combusted and all dates on which unit is fired on any non certified fuel and record specific type(s) of non certified fuel used. [District Rule 1070 and District Rule 2520, section 9.4.2] Federally Enforceable Through Title V Permit
36. Permittee shall maintain records of duration of each start-up, shutdown, and refractory curing, per a period of five years and make such records readily available for District inspection upon request. [District Rules 2080 and 4306] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 6.1, and 4306, 6.1] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: C-1121-41-16

EXPIRATION DATE: 12/31/2006

SECTION: 29 **TOWNSHIP:** 19S **RANGE:** 15E

EQUIPMENT DESCRIPTION:

62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR (S-12) WITH COEN QLN-ULN BURNER, FLUE GAS RECIRCULATION SERVED BY LO-COST H2S SCAVENGER SYSTEM SHARED WITH PERMIT UNITS C-1121-17, '18 AND '19

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. Fuel consumption shall not exceed 1,430,000 scf/day of natural gas. [District NSR Rule] Federally Enforceable Through Title V Permit
5. Only natural gas, vapor recovery gas, or a combination of natural gas and vapor recovery gas shall be used as fuel. [District NSR Rule] Federally Enforceable Through Title V Permit
6. Combined exhaust gases combusted within this steam generator, from the four CVR systems (C-1121-38, -39, -114, & -116) and the section 32 TVR system shall not exceed 1,350,000 scf/day. [District NSR Rule] Federally Enforceable Through Title V Permit
7. Lo-Cost H2S scavenging system shall be used whenever vapor recovery gas is fired in this unit. [District NSR Rule] Federally Enforceable Through Title V Permit
8. The sulfur content of treated waste gas exiting the H2S Scavenger System shall be determined on a daily basis by gas detector tube sampling. [District NSR Rule] Federally Enforceable Through Title V Permit
9. The sulfur content and higher heating value of the treated waste gas exiting the H2S Scavenger System shall be determined on a bi-annual basis using double GC for H2S and mercaptans performed in the laboratory and EPA Method 19. [District NSR Rule] Federally Enforceable Through Title V Permit
10. Daily SOx emissions from combustion of waste gas shall be calculated based on the waste gas sulfur content as determined by gas detector tube sampling or the most recent laboratory analysis, whichever is greater. [District NSR Rule] Federally Enforceable Through Title V Permit
11. Duration of refractory curing shall not exceed 30 hours each per occurrence. Permittee shall notify the District in writing prior to refractory curing. [District Rule 2080] Federally Enforceable Through Title V Permit
12. Emission rates during refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO2; sulfur - 200 pounds of SO2 per hour, or 2000 ppmv as SO2, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO2 - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, and 4801] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
These terms and conditions are part of the Facility-wide Permit to Operate.

13. Start-up is 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 operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4306, 3.25 and 3.22] Federally Enforceable Through Title V Permit
14. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 4305, 5.5.6 and 4306, 5.3] Federally Enforceable Through Title V Permit
15. Emissions from the natural gas/vapor recovery gas-fired steam generator shall not exceed any of the following limits: 0.08 lb-SO_x/MMBtu, 0.057 lb-PM₁₀/MMBtu, or 0.008 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Except during start-up and shutdown periods and refractory curing, emissions from the natural gas/vapor recovery gas-fired steam generator shall not exceed any of the following limits: 15 ppmvd NO_x @ 3% O₂ or 0.0182 lb-NO_x/MMBtu or 43 ppmvd CO @ 3% O₂ or 0.032 lb-CO/MMBtu. [District Rules 2201, 4301, 5.2, 4305, 5.1, 4306, 5.1, and 4351, 5.1] Federally Enforceable Through Title V Permit
17. During start-up and shutdown periods, emissions from the natural gas/vapor recovery gas-fired steam generator shall not exceed either of the following limits: 0.1 lb-NO_x/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Emissions from the natural gas/vapor recovery gas-fired steam generator shall not exceed either of the following limits: 51.5 lb-NO_x/day or 45.8 lb-CO/day. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 6.3.1, 4306, 6.3.1, and 4351, 6.3.1] Federally Enforceable Through Title V Permit
20. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months, (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months, (no more than 30 days before or after the required 36 months source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 6.3.1, 4306, 6.3.1, and 4351, 6.3.1] Federally Enforceable Through Title V Permit
21. 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
22. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 5.5.1 and 4306, 5.5.1] Federally Enforceable Through Title V Permit
23. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 5.5.2 and 4306, 5.5.2] Federally Enforceable Through Title V Permit
24. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 5.5.5 and 4306, 5.5.5] Federally Enforceable Through Title V Permit
25. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
These terms and conditions are part of the Facility-wide Permit to Operate.

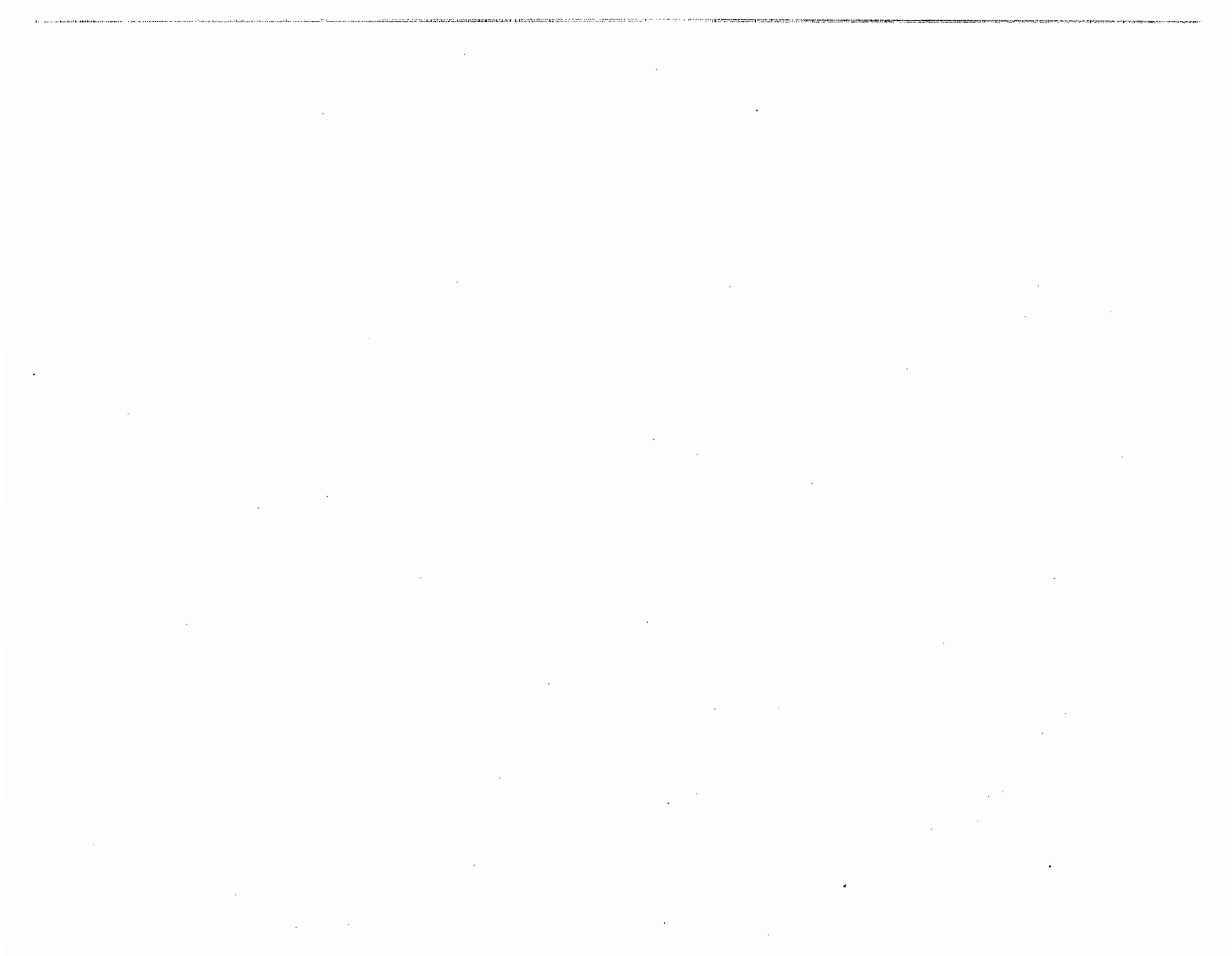
26. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, stack gas moisture content - EPA Method 4, stack gas velocities - EPA Method 2, and fuel gas sulfur content - ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H₂S and mercaptans. [District Rules 1081, 4305, 4306, 6.2, and 4351] Federally Enforceable Through Title V Permit
27. If the steam generator is fired on PUC-regulated natural gas, then the permittee shall maintain on file copies of all natural gas bills or fuel throughput records for a period of five years. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
28. If the steam generator is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the engine shall be determined using ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H₂S and mercaptans. [District Rule 2520, 9.3.2]] Federally Enforceable Through Title V Permit
29. If the steam generator is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
30. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
31. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
32. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
33. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 4201 (Last Amended December 17, 1992), 4301 (Last Amended December 17, 1992), 4406 (Amended December 17, 1992), and 4801 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
34. This unit commenced construction, modification, or reconstruction prior to June 19, 1984. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
35. Permittee shall maintain daily record of all natural gas consumption including waste gas consumption, fuel sulfur content, calculated SO_x emissions, supplier certifications and test results to show compliance with the conditions of this permit. The operator shall record daily amount and type (s) of fuel(s) combusted and all dates on which unit is fired on any non certified fuel and record specific type(s) of non certified fuel used. [District Rule 1070 and District Rule 2520, section 9.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
These terms and conditions are part of the Facility-wide Permit to Operate.

36. Permittee shall maintain records of duration of each start-up, shutdown, and refractory curing, per a period of five years and make such records readily available for District inspection upon request. [District Rules 2080 and 4306] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 6.1, and 4306, 6.1] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

APPENDIX B
Emission Profiles



Permit #: C-1121-17-24	Last Updated
Facility: AERA ENERGY LLC	03/10/2011 DAVIDSOS

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	6023.0	8332.0	19564.0	20805.0	4380.0
Daily Emis. Limit (lb/Day)	27.0	22.8	53.6	57.0	12.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	-23754.0	0.0	0.0	0.0
Q2:	0.0	-23754.0	0.0	0.0	0.0
Q3:	0.0	-23754.0	0.0	0.0	0.0
Q4:	0.0	-23754.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: C-1121-18-24	Last Updated
Facility: AERA ENERGY LLC	03/10/2011 DAVIDSOS

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	5741.0	8322.0	29751.0	16702.0	4176.0
Daily Emis. Limit (lb/Day)	51.5	22.8	81.5	45.8	11.4
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	-8870.0	0.0	0.0	0.0
Q2:	0.0	-8870.0	0.0	0.0	0.0
Q3:	0.0	-8870.0	0.0	0.0	0.0
Q4:	0.0	-8870.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: C-1121-19-24	Last Updated
Facility: AERA ENERGY LLC	03/10/2011 DAVIDSOS

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	5741.0	8322.0	29751.0	16702.0	4176.0
Daily Emis. Limit (lb/Day)	51.5	22.8	81.5	45.8	11.4
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	-8870.0	0.0	0.0	0.0
Q2:	0.0	-8870.0	0.0	0.0	0.0
Q3:	0.0	-8870.0	0.0	0.0	0.0
Q4:	0.0	-8870.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: C-1121-41-24	Last Updated
Facility: AERA ENERGY LLC	03/10/2011 DAVIDSOS

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	5741.0	8322.0	29751.0	16702.0	4176.0
Daily Emis. Limit (lb/Day)	51.5	22.8	81.5	45.8	11.4
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	-8870.0	0.0	0.0	0.0
Q2:	0.0	-8870.0	0.0	0.0	0.0
Q3:	0.0	-8870.0	0.0	0.0	0.0
Q4:	0.0	-8870.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: C-1121-168-10	Last Updated
Facility: AERA ENERGY LLC	03/07/2011 DAVIDSOS

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	78840.0	103336.0	32011.0	72540.0	17817.0
Daily Emis. Limit (lb/Day)	91.8	571.6	48.1	499.5	85.1
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					



APPENDIX C
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-1121-17-24

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: 10000 MING AVE
P O BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 26 **TOWNSHIP:** 19S **RANGE:** 15E

EQUIPMENT DESCRIPTION:

MODIFICATION OF SG S-9, 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR WITH COEN QLN ULN BURNER AND FLUE GAS RECIRCULATION SERVED BY LO-COST H2S SCAVENGER SYSTEM SHARED WITH PERMIT UNITS C-1121-18, '-19 AND '-41: INSTALL SULFATREAT VESSELS DOWNSTREAM OF LO-COST SCAVENGING SYSTEM FOR H2S REMOVAL AND LIMIT EXHAUST SOX EMISSIONS TO 9 PPMV @3% O2 FOR RULE 4320 COMPLIANCE

CONDITIONS

1. 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 Rule 2520] 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. Fuel consumption for the steam generator shall not exceed 1,500 MMBtu/day. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Combined quantity of well vent and tank vapor recovery gases combusted within steam generators '-17, '-18, '-19, and '-41, from the four CVR systems (C-1121-38, -39, -114, & -116) and the section 32 TVR system shall not exceed 675,000 scf/day. [District Rule 2201] 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

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DAVID WARNER, Director of Permit Services

C-1121-17-24: Mar 18 2011 8:25AM -- DAVIDSOS : Joint Inspection NOT Required

5. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
6. Only natural gas, vapor recovery gas, or a combination of natural gas and vapor recovery gas shall be used as fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Lo-Cost H₂S scavenging system shall be used whenever vapor recovery gas is fired in this unit. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
9. Emission rates shall not exceed any of the following limits: NO_x (as NO₂): 15 ppmv @ 3% O₂ or 0.018 lb/MMBtu (27.0 lb/day), CO: 43 ppmv @ 3%O₂ or 0.032 lb/MMBtu (48.0 lb/day), PM₁₀: 0.0076 lb/MMBtu (11.4 lb-PM₁₀/day), or VOC: 0.008 lb/MMBtu (12.0 lb/day). [District Rule 2201, 4201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
10. When fired on PUC quality natural gas, the SO_x emissions rate shall not exceed 0.00285 lb/MMBtu. [District Rule 2201 and 4320] Federally Enforceable Through Title V Permit
11. When fired on gases other than PUC quality natural gas, the SO_x emissions rate shall not exceed 9 ppmv @ 3% O₂ or 0.015 lb/MMBtu (22.8 lb/day). [District Rule 2201 and 4320] Federally Enforceable Through Title V Permit
12. Combined emissions of SO_x, calculated as SO₂, from the steam generators and the flare (C-1121-17, -18, -19, -41, & -168) shall not exceed 28,580 lb/yr. [District Rule 2201]
13. The sulfur content of treated waste gas exiting the H₂S Scavenger System shall be determined on a daily basis by gas detector tube sampling. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
14. The sulfur content of the waste gas exiting the sulfur treatment system shall be tested weekly for sulfur content and higher heating value. If compliance with the sulfur emission limits has been demonstrated for 8 consecutive weeks, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. Testing shall be by grab sample analysis by GC-FPD/TCD or other District approved methods for H₂S and mercaptans performed in the laboratory and EPA Method 19. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
15. Daily SO_x emissions from combustion of waste gas shall be calculated based on the waste gas sulfur content as determined by gas detector tube sampling or the most recent laboratory analysis, whichever is greater. [District Rule 2201 and 4320] Federally Enforceable Through Title V Permit
16. When source or type of gas changes, sampling for sulfur content shall be conducted within one week. A change in fuel type is defined as changing between any of the following: PUC-Quality gas, unprocessed field gas, or any field gas with any specific level of pretreatment. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
17. Within 60 days of startup and at least once every 12 months thereafter, unit shall be stack tested to demonstrate compliance with the SO_x emission limit required by this permit (ppmv @3 % O₂) using EPA Method 6C, Method 8 or ARB Method 100. Stack testing for SO_x emissions is not required if unit was fired only on PUC quality natural during the 12 months prior to the compliance testing anniversary date. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
18. If the unit is fired on noncertified gaseous fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
19. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.4.2 and 4305, 6.2.1] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rule 4305, 5.5.6 and 4306, 5.3] Federally Enforceable Through Title V Permit
21. Subject to the definitions and requirements of Section 5.3, District Rule 4306, emission factor limitations of this permit shall not apply during periods of startup, shutdown, or refractory curing. Duration of startup and shutdown shall not exceed 2 hours each per occurrence. Refractory curing period is defined as a maintenance-based reduced-load period of time during which a unit is brought from a shutdown status to staged rates of firing for the sole purpose of curing new refractory lining in the heat exchanger section of the unit, and shall not exceed 30 hours per occurrence. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
22. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
23. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
24. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
25. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
26. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months, (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months, (no more than 30 days before or after the required 36 months source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 6.3.1, 4306, 6.3.1, and 4351, 6.3.1]
27. The source plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
28. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

29. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
30. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
31. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, stack gas moisture content - EPA Method 4, stack gas velocities - EPA Method 2, and fuel gas sulfur content - ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H₂S and mercaptans. [District Rules 1081, 4305, 4306, 6.2, and 4351] Federally Enforceable Through Title V Permit
32. NO_x, and CO emissions shall be measured with annual source testing conducted by independent testing laboratory with sample collection by ARB certified testing laboratory and shall be witnessed or authorized by the District. [District Rule 1081, 3.0, 4.0 and Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
33. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
34. If the steam generator is fired on PUC-regulated natural gas, then the permittee shall maintain on file copies of all natural gas bills or fuel throughput records for a period of five years. [District Rule 2520, 9.3.2]
35. If the steam generator is not fired on PUC-regulated natural gas, then the sulfur content of the non-certified (non PUC/FERC regulated) natural gas being fired in the steam generator shall be determined using ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H₂S and mercaptans. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
36. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
37. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 4201 (Last Amended December 17, 1992), 4301 (Last Amended December 17, 1992), 4406 (Amended December 17, 1992), and 4801 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2]
38. This unit commenced construction, modification, or reconstruction prior to June 19, 1984. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
39. Permittee shall maintain daily record of all natural gas consumption including waste gas consumption, fuel sulfur content, calculated SO_x emissions, supplier certifications and test results to show compliance with the conditions of this permit. The operator shall record daily amount and type (s) of fuel(s) combusted and all dates on which unit is fired on any non certified fuel and record specific type(s) of non certified fuel used. [District Rule 1070 and District Rule 2520, section 9.4.2]
40. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306]
41. ATCs C-1121-17-19, '-17-21, '-17-22, and '-17-23, shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
42. This ATC shall be implemented concurrent with ATCs C-1121-18-24, '-19-24, '-41-24, and '-168-10 [District Rule] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-1121-18-24

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: 10000 MING AVE
P O BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 29 TOWNSHIP: 19S RANGE: 15E

EQUIPMENT DESCRIPTION:

MODIFICATION OF SG S-10, 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR WITH A COEN QLN-ULN LOW NOX BURNER, AND A FLUE GAS RECIRCULATION (FGR) SYSTEM SERVED BY LO-COST H2S SCAVENGER SYSTEM SHARED WITH PERMIT UNITS C-1121-17, '-19 AND '-41: INSTALL SULFATREAT VESSELS DOWNSTREAM OF LO-COST SCAVENGING SYSTEM FOR H2S REMOVAL AND LIMIT EXHAUST SOX EMISSIONS TO 9 PPMV @3% O2 FOR RULE 4320 COMPLIANCE

CONDITIONS

1. 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 Rule 2520] 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. Fuel consumption for the steam generator shall not exceed 1,500 MMBtu/day. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Combined quantity of well vent and tank vapor recovery gases combusted within steam generators '-17, '-18, '-19, and '-41, from the four CVR systems (C-1121-38, -39, -114, & -116) and the section 32 TVR system shall not exceed 675,000 scf/day. [District Rule 2201] 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-1121-18-24: Mar 18 2011 8:25AM - DAVIDSOS : Joint Inspection NOT Required

5. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
6. Only natural gas, vapor recovery gas, or a combination of natural gas and vapor recovery gas shall be used as fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Lo-Cost H₂S scavenging system shall be used whenever vapor recovery gas is fired in this unit. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
9. Emission rates shall not exceed any of the following limits: NO_x (as NO₂): 15 ppmv @ 3% O₂ or 0.018 lb/MMBtu (27.0 lb/day), CO: 43 ppmv @ 3%O₂ or 0.032 lb/MMBtu (48.0 lb/day), PM₁₀: 0.0076 lb/MMBtu (11.4 lb-PM₁₀/day), or VOC: 0.008 lb/MMBtu (12.0 lb/day). [District Rule 2201, 4201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
10. When fired on PUC quality natural gas, the SO_x emissions rate shall not exceed 0.00285 lb/MMBtu. [District Rule 2201 and 4320] Federally Enforceable Through Title V Permit
11. When fired on gases other than PUC quality natural gas, the SO_x emissions rate shall not exceed 9 ppmv @ 3% O₂ or 0.015 lb/MMBtu (22.8 lb/day). [District Rule 2201 and 4320] Federally Enforceable Through Title V Permit
12. Combined emissions of SO_x, calculated as SO₂, from the steam generators and the flare (C-1121-17, -18, -19, -41, & -168) shall not exceed 28,580 lb/yr. [District Rule 2201]
13. The sulfur content of treated waste gas exiting the H₂S Scavenger System shall be determined on a daily basis by gas detector tube sampling. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
14. The sulfur content of the waste gas exiting the sulfur treatment system shall be tested weekly for sulfur content and higher heating value. If compliance with the sulfur emission limits has been demonstrated for 8 consecutive weeks, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. Testing shall be by grab sample analysis by GC-FPD/TCD or other District approved methods for H₂S and mercaptans performed in the laboratory and EPA Method 19. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
15. Daily SO_x emissions from combustion of waste gas shall be calculated based on the waste gas sulfur content as determined by gas detector tube sampling or the most recent laboratory analysis, whichever is greater. [District Rule 2201 and 4320] Federally Enforceable Through Title V Permit
16. When source or type of gas changes, sampling for sulfur content shall be conducted within one week. A change in fuel type is defined as changing between any of the following: PUC-Quality gas, unprocessed field gas, or any field gas with any specific level of pretreatment. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
17. Within 60 days of startup and at least once every 12 months thereafter, unit shall be stack tested to demonstrate compliance with the SO_x emission limit required by this permit (ppmv @3 % O₂) using EPA Method 6C, Method 8 or ARB Method 100. Stack testing for SO_x emissions in not required if unit was fired only on PUC quality natural during the 12 months prior to the compliance testing anniversary date. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
18. If the unit is fired on noncertified gaseous fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
19. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.4.2 and 4305, 6.2.1] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rule 4305, 5.5.6 and 4306, 5.3] Federally Enforceable Through Title V Permit
21. Subject to the definitions and requirements of Section 5.3, District Rule 4306, emission factor limitations of this permit shall not apply during periods of startup, shutdown, or refractory curing. Duration of startup and shutdown shall not exceed 2 hours each per occurrence. Refractory curing period is defined as a maintenance-based reduced-load period of time during which a unit is brought from a shutdown status to staged rates of firing for the sole purpose of curing new refractory lining in the heat exchanger section of the unit, and shall not exceed 30 hours per occurrence. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
22. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
23. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
24. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
25. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
26. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months, (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months, (no more than 30 days before or after the required 36 months source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 6.3.1, 4306, 6.3.1, and 4351, 6.3.1]
27. The source plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
28. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

29. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
30. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
31. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, stack gas moisture content - EPA Method 4, stack gas velocities - EPA Method 2, and fuel gas sulfur content - ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H₂S and mercaptans. [District Rules 1081, 4305, 4306, 6.2, and 4351] Federally Enforceable Through Title V Permit
32. NO_x, and CO emissions shall be measured with annual source testing conducted by independent testing laboratory with sample collection by ARB certified testing laboratory and shall be witnessed or authorized by the District. [District Rule 1081, 3.0, 4.0 and Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
33. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
34. If the steam generator is fired on PUC-regulated natural gas, then the permittee shall maintain on file copies of all natural gas bills or fuel throughput records for a period of five years. [District Rule 2520, 9.3.2]
35. If the steam generator is not fired on PUC-regulated natural gas, then the sulfur content of the non-certified (non PUC/FERC regulated) natural gas being fired in the steam generator shall be determined using ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H₂S and mercaptans. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
36. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
37. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 4201 (Last Amended December 17, 1992), 4301 (Last Amended December 17, 1992), 4406 (Amended December 17, 1992), and 4801 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2]
38. This unit commenced construction, modification, or reconstruction prior to June 19, 1984. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
39. Permittee shall maintain daily record of all natural gas consumption including waste gas consumption, fuel sulfur content, calculated SO_x emissions, supplier certifications and test results to show compliance with the conditions of this permit. The operator shall record daily amount and type (s) of fuel(s) combusted and all dates on which unit is fired on any non certified fuel and record specific type(s) of non certified fuel used. [District Rule 1070 and District Rule 2520, section 9.4.2]
40. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306]
41. ATCs C-1121-18-19, '-18-21, and '-18-22, and will be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
42. This ATC shall be implemented concurrent with ATCs C-1121-17-24, '-19-24, '-41-24, and '-168-10 [District Rule] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-1121-19-24

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: 10000 MING AVE
P O BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 29 **TOWNSHIP:** 19S **RANGE:** 15E

EQUIPMENT DESCRIPTION:

MODIFICATION OF SG S-11, 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR WITH A COEN QLN-ULN LOW NOX BURNER AND A FLUE GAS RECIRCULATION (FGR) SYSTEM SERVED BY LO-COST H2S SCAVENGER SYSTEM SHARED WITH PERMIT UNITS C-1121-17, '-18 AND '-41: INSTALL SULFATREAT VESSELS DOWNSTREAM OF LO-COST SCAVENGING SYSTEM FOR H2S REMOVAL AND LIMIT EXHAUST SOX EMISSIONS TO 9 PPMV @ 3% O2 FOR RULE 4320 COMPLIANCE

CONDITIONS

1. 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 Rule 2520] 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. Fuel consumption for the steam generator shall not exceed 1,500 MMBtu/day. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Combined quantity of well vent and tank vapor recovery gases combusted within steam generators '-17, '-18, '-19, and '-41, from the four CVR systems (C-1121-38, -39, -114, & -116) and the section 32 TVR system shall not exceed 675,000 scf/day. [District Rule 2201] 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

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DAVID WARNER, Director of Permit Services
C-1121-19-24 : Mar 18 2011 8:25AM - DAVIDBOB : Joint Inspection NOT Required

5. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
6. Only natural gas, vapor recovery gas, or a combination of natural gas and vapor recovery gas shall be used as fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Lo-Cost H₂S scavenging system shall be used whenever vapor recovery gas is fired in this unit. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
9. Emission rates shall not exceed any of the following limits: NO_x (as NO₂): 15 ppmv @ 3% O₂ or 0.018 lb/MMBtu (27.0 lb/day), CO: 43 ppmv @ 3%O₂ or 0.032 lb/MMBtu (48.0 lb/day), PM₁₀: 0.0076 lb/MMBtu (11.4 lb-PM₁₀/day), or VOC: 0.008 lb/MMBtu (12.0 lb/day). [District Rule 2201, 4201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
10. When fired on PUC quality natural gas, the SO_x emissions rate shall not exceed 0.00285 lb/MMBtu. [District Rule 2201 and 4320] Federally Enforceable Through Title V Permit
11. When fired on gases other than PUC quality natural gas, the SO_x emissions rate shall not exceed 9 ppmv @ 3% O₂ or 0.015 lb/MMBtu (22.8 lb/day). [District Rule 2201 and 4320] Federally Enforceable Through Title V Permit
12. Combined emissions of SO_x, calculated as SO₂, from the steam generators and the flare (C-1121-17, -18, -19, -41, & -168) shall not exceed 28,580 lb/yr. [District Rule 2201]
13. The sulfur content of treated waste gas exiting the H₂S Scavenger System shall be determined on a daily basis by gas detector tube sampling. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
14. The sulfur content of the waste gas exiting the sulfur treatment system shall be tested weekly for sulfur content and higher heating value. If compliance with the sulfur emission limits has been demonstrated for 8 consecutive weeks, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. Testing shall be by grab sample analysis by GC-FPD/TCD or other District approved methods for H₂S and mercaptans performed in the laboratory and EPA Method 19. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
15. Daily SO_x emissions from combustion of waste gas shall be calculated based on the waste gas sulfur content as determined by gas detector tube sampling or the most recent laboratory analysis, whichever is greater. [District Rule 2201 and 4320] Federally Enforceable Through Title V Permit
16. When source or type of gas changes, sampling for sulfur content shall be conducted within one week. A change in fuel type is defined as changing between any of the following: PUC-Quality gas, unprocessed field gas, or any field gas with any specific level of pretreatment. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
17. Within 60 days of startup and at least once every 12 months thereafter, unit shall be stack tested to demonstrate compliance with the SO_x emission limit required by this permit (ppmv @3 % O₂) using EPA Method 6C, Method 8 or ARB Method 100. Stack testing for SO_x emissions is not required if unit was fired only on PUC quality natural during the 12 months prior to the compliance testing anniversary date. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
18. If the unit is fired on noncertified gaseous fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
19. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.4.2 and 4305, 6.2.1] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rule 4305, 5.5.6 and 4306, 5.3] Federally Enforceable Through Title V Permit
21. Subject to the definitions and requirements of Section 5.3, District Rule 4306, emission factor limitations of this permit shall not apply during periods of startup, shutdown, or refractory curing. Duration of startup and shutdown shall not exceed 2 hours each per occurrence. Refractory curing period is defined as a maintenance-based reduced-load period of time during which a unit is brought from a shutdown status to staged rates of firing for the sole purpose of curing new refractory lining in the heat exchanger section of the unit, and shall not exceed 30 hours per occurrence. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
22. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
23. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
24. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
25. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
26. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months, (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months, (no more than 30 days before or after the required 36 months source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 6.3.1, 4306, 6.3.1, and 4351, 6.3.1]
27. The source plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
28. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

29. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
30. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
31. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, stack gas moisture content - EPA Method 4, stack gas velocities - EPA Method 2, and fuel gas sulfur content - ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H₂S and mercaptans. [District Rules 1081, 4305, 4306, 6.2, and 4351] Federally Enforceable Through Title V Permit
32. NO_x and CO emissions shall be measured with annual source testing conducted by independent testing laboratory with sample collection by ARB certified testing laboratory and shall be witnessed or authorized by the District. [District Rule 1081, 3.0, 4.0 and Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
33. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
34. If the steam generator is fired on PUC-regulated natural gas, then the permittee shall maintain on file copies of all natural gas bills or fuel throughput records for a period of five years. [District Rule 2520, 9.3.2]
35. If the steam generator is not fired on PUC-regulated natural gas, then the sulfur content of the non-certified (non PUC/FERC regulated) natural gas being fired in the steam generator shall be determined using ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H₂S and mercaptans. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
36. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
37. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 4201 (Last Amended December 17, 1992), 4301 (Last Amended December 17, 1992), 4406 (Amended December 17, 1992), and 4801 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2]
38. This unit commenced construction, modification, or reconstruction prior to June 19, 1984. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
39. Permittee shall maintain daily record of all natural gas consumption including waste gas consumption, fuel sulfur content, calculated SO_x emissions, supplier certifications and test results to show compliance with the conditions of this permit. The operator shall record daily amount and type (s) of fuel(s) combusted and all dates on which unit is fired on any non certified fuel and record specific type(s) of non certified fuel used. [District Rule 1070 and District Rule 2520, section 9.4.2]
40. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306]
41. ATCs : C-1121-19-19, '-19-21, '-19-2, and '-19-23 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
42. This ATC shall be implemented concurrent with ATCs C-1121-17-24, '-18-24, '-41-24, and '-168-10 [District Rule] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-1121-41-24

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: 10000 MING AVE
P O BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 29 **TOWNSHIP:** 19S **RANGE:** 15E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 62.5 MMBTU/HR THERMOTICS, NATURAL GAS/VAPOR RECOVERY GAS-FIRED STEAM GENERATOR (S-12) WITH COEN QLN-ULN BURNER, FLUE GAS RECIRCULATION SERVED BY LO-COST H2S SCAVENGER SYSTEM SHARED WITH PERMIT UNITS C-1121-17, '-18 AND '-19: INSTALL SULFATREAT VESSELS DOWNSTREAM OF LO-COST SCAVENGING SYSTEM FOR H2S REMOVAL AND LIMIT EXHAUST SOX EMISSIONS TO 9 PPMV @ 3% O2 FOR RULE 4320 COMPLIANCE

CONDITIONS

1. 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 Rule 2520] 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. Fuel consumption for the steam generator shall not exceed 1,500 MMBtu/day. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Combined quantity of well vent and tank vapor recovery gases combusted within steam generators '-17, '-18, '-19, and '-41, from the four CVR systems (C-1121-38, -39, -114, & -116) and the section 32 TVR system shall not exceed 675,000 scf/day. [District Rule 2201] 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

DAVID WARNER, Director of Permit Services

C-1121-41-24: Mar 16 2011 8:25AM - DAVIDSOS : Joint Inspection NOT Required

5. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
6. Only natural gas, vapor recovery gas, or a combination of natural gas and vapor recovery gas shall be used as fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Lo-Cost H₂S scavenging system shall be used whenever vapor recovery gas is fired in this unit. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
9. Emission rates shall not exceed any of the following limits: NO_x (as NO₂): 15 ppmv @ 3% O₂ or 0.018 lb/MMBtu (27.0 lb/day), CO: 43 ppmv @ 3%O₂ or 0.032 lb/MMBtu (48.0 lb/day), PM₁₀: 0.0076 lb/MMBtu (11.4 lb-PM₁₀/day), or VOC: 0.008 lb/MMBtu (12.0 lb/day). [District Rule 2201, 4201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
10. When fired on PUC quality natural gas, the SO_x emissions rate shall not exceed 0.00285 lb/MMBtu. [District Rule 2201 and 4320] Federally Enforceable Through Title V Permit
11. When fired on gases other than PUC quality natural gas, the SO_x emissions rate shall not exceed 9 ppmv @ 3% O₂ or 0.015 lb/MMBtu (22.8 lb/day). [District Rule 2201 and 4320] Federally Enforceable Through Title V Permit
12. Combined emissions of SO_x, calculated as SO₂, from the steam generators and the flare (C-1121-17, -18, -19, -41, & -168) shall not exceed 28,580 lb/yr. [District Rule 2201]
13. The sulfur content of treated waste gas exiting the H₂S Scavenger System shall be determined on a daily basis by gas detector tube sampling. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
14. The sulfur content of the waste gas exiting the sulfur treatment system shall be tested weekly for sulfur content and higher heating value. If compliance with the sulfur emission limits has been demonstrated for 8 consecutive weeks, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. Testing shall be by grab sample analysis by GC-FPD/TCD or other District approved methods for H₂S and mercaptans performed in the laboratory and EPA Method 19. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
15. Daily SO_x emissions from combustion of waste gas shall be calculated based on the waste gas sulfur content as determined by gas detector tube sampling or the most recent laboratory analysis, whichever is greater. [District Rule 2201 and 4320] Federally Enforceable Through Title V Permit
16. When source or type of gas changes, sampling for sulfur content shall be conducted within one week. A change in fuel type is defined as changing between any of the following: PUC-Quality gas, unprocessed field gas, or any field gas with any specific level of pretreatment. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
17. Within 60 days of startup and at least once every 12 months thereafter, unit shall be stack tested to demonstrate compliance with the SO_x emission limit required by this permit (ppmv @3 % O₂) using EPA Method 6C, Method 8 or ARB Method 100. Stack testing for SO_x emissions in not required if unit was fired only on PUC quality natural during the 12 months prior to the compliance testing anniversary date. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
18. If the unit is fired on noncertified gaseous fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
19. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.4.2 and 4305, 6.2.1] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rule 4305, 5.5.6 and 4306, 5.3] Federally Enforceable Through Title V Permit
21. Subject to the definitions and requirements of Section 5.3, District Rule 4306, emission factor limitations of this permit shall not apply during periods of startup, shutdown, or refractory curing. Duration of startup and shutdown shall not exceed 2 hours each per occurrence. Refractory curing period is defined as a maintenance-based reduced-load period of time during which a unit is brought from a shutdown status to staged rates of firing for the sole purpose of curing new refractory lining in the heat exchanger section of the unit, and shall not exceed 30 hours per occurrence. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
22. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
23. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
24. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
25. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
26. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months, (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months, (no more than 30 days before or after the required 36 months source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 6.3.1, 4306, 6.3.1, and 4351, 6.3.1]
27. The source plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
28. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

29. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
30. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
31. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, stack gas moisture content - EPA Method 4, stack gas velocities - EPA Method 2, and fuel gas sulfur content - ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H₂S and mercaptans. [District Rules 1081, 4305, 4306, 6.2, and 4351] Federally Enforceable Through Title V Permit
32. NO_x, and CO emissions shall be measured with annual source testing conducted by independent testing laboratory with sample collection by ARB certified testing laboratory and shall be witnessed or authorized by the District. [District Rule 1081, 3.0, 4.0 and Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
33. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
34. If the steam generator is fired on PUC-regulated natural gas, then the permittee shall maintain on file copies of all natural gas bills or fuel throughput records for a period of five years. [District Rule 2520, 9.3.2]
35. If the steam generator is not fired on PUC-regulated natural gas, then the sulfur content of the non-certified (non PUC/FERC regulated) natural gas being fired in the steam generator shall be determined using ASTM D 1072, D 4468, D 4084, D 3246, or double GC for H₂S and mercaptans. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
36. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
37. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 4201 (Last Amended December 17, 1992), 4301 (Last Amended December 17, 1992), 4406 (Amended December 17, 1992), and 4801 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2]
38. This unit commenced construction, modification, or reconstruction prior to June 19, 1984. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
39. Permittee shall maintain daily record of all natural gas consumption including waste gas consumption, fuel sulfur content, calculated SO_x emissions, supplier certifications and test results to show compliance with the conditions of this permit. The operator shall record daily amount and type (s) of fuel(s) combusted and all dates on which unit is fired on any non certified fuel and record specific type(s) of non certified fuel used. [District Rule 1070 and District Rule 2520, section 9.4.2]
40. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306]
41. ATCs C-1121-41-19, '-41-21, 41-22, and '-41-23 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
42. This ATC shall be implemented concurrent with ATCs C-1121-17-24, '-18-24, '-19-24, and '-168-10 [District Rule] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
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PERMIT NO: C-1121-168-10

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: 10000 MING AVE
P O BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF DORMANT 7.16 MMBTU/HR FLARE WITH H₂S SCAVENGER SYSTEM TO BE USED TO INCINERATE NATURAL, WELL CASING, AND VAPOR RECOVERY GAS DURING MAINTENANCE OF FOUR 62.5 MMBTU/HR STEAM GENERATORS (C-1121-17, -18, -19, AND -41): LOWER ANNUAL SOX LIMIT SHARED WITH STEAM GENERATORS C-1121-17, -18, -19, AND -41 TO 28,580 LB/YR

CONDITIONS

1. No modification to this unit shall be performed without an Authority to Construct for such modification(s), except for changes specified in conditions below. [District Rule 2010] Federally Enforceable Through Title V Permit
2. This equipment shall not be operated for any reason until an Authority to Construct permit is issued approving all necessary retrofits required to comply with the applicable requirements of District Rule 4311. [District Rule 4311] Federally Enforceable Through Title V Permit
3. The operator shall permanently disconnect the fuel supply line serving this unit. [District Rule 4311] Federally Enforceable Through Title V Permit
4. 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
5. Only PUC-quality natural gas or a combination of natural gas and vapor recovery gas shall be used as fuel. [District NSR Rule] Federally Enforceable Through Title V Permit
6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] 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

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DAVID WARNER, Director of Permit Services
C-1121-168-10 : Mar 16 2011 8:26AM - DAVIDSOS : Joint Inspection NOT Required

7. Fuel consumption for the flare shall not exceed 1.35 MMscf/day. [District NSR Rule] Federally Enforceable Through Title V Permit
8. Combined exhaust gases combusted within steam generators '-17, '-18, '-19, and '-41, from the four CVR systems (C-1121-38, -39, -114, & -116) and the section 32 TVR system shall not exceed 675,000 scf/day. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Emissions from the flare shall not exceed any of the following limits: 48.1 lb-PM10/day, 571.6 lb-SOx/day calculated as SO2; 91.8 lb-NOx/day calculated as NO2, 85.1 lb-VOC/day, or 499.5 lb-CO/day. [District NSR Rules, Rule 4201, 3.1 & Rule 4301, 5.1, 5.2] Federally Enforceable Through Title V Permit
10. When fired only on natural gas, emissions from the flare shall not exceed any of the following limits: 0.008 lb-PM10/MMBtu calculated to 12% CO2; 0.00285 lb-SOx/MMBtu calculated as SO2; 0.068 lb-NOx/MMBtu calculated as NO2 @ 3% O2 or 30 ppmv @ 3% O2; 0.063 lb-VOC/MMBtu, or 0.37 lb-CO/MMBtu @ 3% O2. [District NSR Rules, Rule 4201, 3.1 & Rule 4301, 5.1, 5.2] Federally Enforceable Through Title V Permit
11. When fired only on waste gas, emissions from the flare shall not exceed any of the following limits: 0.633 lb-PM10/MMBtu calculated to 12% CO2; 8.44 lb-SOx/MMBtu calculated as SO2; 0.068 lb-NOx/MMBtu calculated as NO2 @ 3% O2 or 30 ppmv @ 3% O2; 0.063 lb-VOC/MMBtu, or 0.37 lb-CO/MMBtu @ 3% O2. [District NSR Rules, Rule 4201, 3.1 & Rule 4301, 5.1, 5.2] Federally Enforceable Through Title V Permit
12. Combined emissions of SOx, calculated as SO2, from the steam generators and the flare (C-1121-17, -18, -19, -41, & -168) shall not exceed 28,580 lb/yr. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The sulfur content of treated waste gas exiting the H2S Scavenger System shall not exceed 5000 ppmv. Sulfur content shall be determined on a daily basis by gas detector tube sampling. [District NSR Rule] Federally Enforceable Through Title V Permit
14. Lo-Cost H2S scavenging system shall be used whenever vapor recovery gas is fired in this unit. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Operation of this flare shall only occur when steam generators C-1121-17, -18,-19, and -41 are all shut down due to maintenance. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311] Federally Enforceable Through Title V Permit
17. The outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311] Federally Enforceable Through Title V Permit
18. Except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. Flares that use flow-sensing automatic ignition systems and which do not use a continuous flame pilot shall use purge gas for purging. [District Rule 4311] Federally Enforceable Through Title V Permit
19. Flare gas pressure shall be greater than or equal to 5 psig. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Gas line to flare shall be equipped with operational, volumetric flow rate indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Operation of the flare shall not exceed 48 hours per calendar quarter or 192 hours per calendar year. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Records of operating hours and gas volume flared shall be maintained, retained on the premises for at least five years, and be made available for District inspection on request. [District Rule 2201] Federally Enforceable Through Title V Permit
23. This ATC shall be implemented concurrent with ATCs C-1121-17-24, '-18-24, '-19-24, and '-41-24. [District Rule] Federally Enforceable Through Title V Permit

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