



NOTIFICATION OF PRELIMINARY DECISION BY THE MONTEREY BAY AIR RESOURCES DISTRICT TO ISSUE A SIGNIFICANT MODIFICATION OF THE FEDERAL OPERATING (TITLE V) PERMIT TO AERA ENERGY, LLC

Pursuant to Rule 218, the Monterey Bay Air Resources District solicits written public comments to the preliminary decision to approve the issuance of a Title V Permit significant modification to Aera Energy, LLC (Aera) for their existing crude oil production facility located at 66893 Sargent Canyon Road in San Ardo.

Aera's San Ardo facility is subject to the requirements of the federally mandated Title V permitting program. The Title V permit to be issued will contain all the applicable federal requirements, and will not change Aera's operation.

Aera has submitted an application for a significant modification of the Title V Permit. Aera is requesting to cancel the permit for the portable drilling rigs with diesel engines and to reduce the performance test frequency of their steam generators equipped with wet scrubber system from a quarterly basis to an annual basis. The approval of this project is being proposed because the facility has the capability of complying with all applicable federal requirements.

The proposed permit will be forwarded to the US EPA for a 45-day review period. The District will not issue a permit to which EPA objects. The public may petition the US EPA, Region 9, Operating Permits Section, within 60 days after the US EPA 45-day review period to object the issuance of the final permit. This petition shall be based only on objections that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impracticable to raise the issue during that time period.

The Aera application and the District Evaluation Report of this project are available for public inspection at the District office and website at www.mbard.org.

The public has an opportunity to review and comment on the proposed Project. Under special circumstances, the District may hold a public hearing. Written comments must be submitted to the address below and be postmarked by November 15, 2019.

Monterey Bay
Air Resources District
24580 Silver Cloud Court
Monterey, CA 93940
(831) 647-9411
ajimenez@mbard.org
Attention: Armando Jimenez

MONTEREY BAY AIR RESOURCES DISTRICT

24580 Silver Cloud Court
Monterey, CA 93940
Telephone: (831) 647-9411

**EVALUATION REPORT AND STATEMENT OF BASIS FOR
SIGNIFICANT MODIFICATION
OF THE MAJOR FACILITY REVIEW PERMIT**

October 2019
Application TV-0000007E

APPLICATION RECEIVED FROM:

Aera Energy LLC
P.O. Box 11164
Bakersfield, CA 93389-1164

PLANT SITE LOCATION:

66893 Sargent Canyon Road
San Ardo, CA 93450

APPLICATION PROCESSED BY:

Armando Jimenez, Air Quality Engineer

Nature of Business: Crude Oil Production

SIC Codes: 1311 - Crude Petroleum and Natural Gas

RESPONSIBLE OFFICIAL:

Name: Mr. T.C. Witt
Title: Vice President Operations
Phone: (661) 665-3141

ALTERNATIVE RESPONSIBLE OFFICIALS:

Name: Mr. J. M. Ohman
Title: Operations Manager

Name: Mr. J. E. Morones
Title: Process Supervisor

FACILITY CONTACT PERSON:

Name: Ms. C.A. Long
Title: Environmental Specialist
Phone: (831) 385-7704

TABLE OF CONTENTS

PROJECT DESCRIPTION..... 3
EQUIPMENT DESCRIPTION 3
APPLICABLE FEDERAL REQUIREMENTS..... 5
COMPLIANCE DETERMINATION FOR APPLICABLE FEDERAL REQUIREMENTS 6
THE FOLLOWING WILL BE INCLUDED ON THE TITLE V PERMIT: 23
PERMIT SHIELD..... 23
FEDERALLY ENFORCEABLE EMISSION LIMITS AND STANDARDS 23
TESTING REQUIREMENTS AND PROCEDURES..... 23
MONITORING AND RECORD KEEPING REQUIREMENTS 26
REPORTING REQUIREMENTS 26
GENERAL CONDITIONS 26

FACILITY DESCRIPTION

Aera Energy LLC (Aera) operates a crude oil production facility in the San Ardo Field in Southern Monterey County. Aera's operation includes both primary and tertiary crude oil production wells.

These production wells are supported by several categories of equipment necessary to recover heavy crude oil from the production zones. These categories include: 1) steam generators; 2) a cogeneration plant; 3) produced crude oil storage tanks; 4) oil and water separation equipment including heater treaters, free water knockout vessels, induced gas flotation units, skim tanks, produced water tanks, and sand basins; 5) well head casing vent vapor collection system; 6) emergency flare; and 7) gasoline dispensing; ~~and 8) crude oil/drilling workover rigs.~~

Aera's facility is considered a federal Major Source and subject to the Title V permitting program due to the potential to emit oxides of nitrogen (NO_x) and sulfur dioxide (SO₂).

PROJECT DESCRIPTION

Aera has submitted a permit application requesting the modification of the source testing permit condition for the steam generators equipped with wet scrubber system, current condition #53. The request is for the following:

- Modification of the performance testing condition to reduce testing frequency from the current quarterly basis to an annual basis.
- Cancellation of the permits for the portable oil drilling rigs with diesel fired internal combustion engines.

Aera Energy is not proposing any operational changes to the steam generators. The emissions profiles from the steam generators will remain unchanged. Pursuant to Rule 218 Section 2.27, a modification to a federally enforceable condition on a permit to operate which significantly changes monitoring conditions or provides a relaxation of any record keeping condition is a significant permit modification to the Title V permit. The proposed reduction in the frequency of the performance testing for the steam generator from quarterly to annual is a relaxation of the monitoring and record keeping requirement and is considered a significant modification.

EQUIPMENT DESCRIPTION

The equipment description will be updated to note the cancellation of the permits for the portable drilling rigs. In addition, the District will update the equipment description for the nine (9) steam generators rated at 85 MMBtu/Hr to identify that the units are equipped with flue gas recirculation.

The equipment description will be updated as follows:

1. Oil Recovery And Steam Injection Wells.
- ~~2. Drilling Rigs With Diesel Fired Internal Combustion Engines.~~

~~3.2.~~ Cogeneration Facilities, Two Units (Cogen A & B) Each Consisting Of:

- a. Solar Centaur T-4501 Gas Turbine, Fired On Natural Gas, Rated At 61.5 MMBtu/Hr Maximum Heat Input And 3.2 MW Electrical Output, Evaporative Cooler On Turbine Inlet, Water Injection For NO_x Control (0.5 Lbm H₂O/Lbm Fuel).
- b. Heat Recovery Steam Generator With Duct Burner Fired On Natural Gas, 38.7 MMBtu/Hr Maximum Heat Input, Steam Output Rating: 57,180 Lbs/Hr @ 1054 psia and 551°F.
- c. NO_x Abatement System, Zeolite Catalyst And Ammonia Injection System.

~~4.3.~~ One Steam Generator (Identification Number 30-13), Fired On Natural Gas 62.5 MMBtu/Hr Maximum Heat Input. With Flue Gas Recirculation.

~~5.4.~~ Nine Steam Generators (Identification Numbers 12-2 Through 12-5, 12-7 Through 12-10, And 30-1), Fired On Natural Gas, 85 MMBtu/Hr Maximum Heat Input. With Flue Gas Recirculation.

~~6.5.~~ Two Steam Generators With Packed Tower Scrubber System (Identification Numbers 30-6 And 30-10A), Fired On Natural Gas And/Or Produced Gas, 62.5 MMBtu/Hr Maximum Heat Input.

~~7.6.~~ One Steam Generator With Three Tray Scrubber System (Identification Number 30-9), Fired On Natural Gas And/Or Produced Gas, 62.5 MMBtu/Hr Maximum Heat Input.

~~8.7.~~ Casing Gas Processing Plant With A Design Capacity Of 10.0 MM Scf/Day.

~~9.8.~~ Crude Oil Heater Treater (Identification Number CTB-1), Fired On Natural Gas, Equipped With Two Burners, Each Burner Has A Maximum Heat Input Rating Of 4.2 MMBtu/Hr.

~~10.9.~~ Three Crude Oil Heater Treaters (Identification Numbers CTB-2, CTB-3 And CTB-4), Fired On Natural Gas, Each Unit Equipped With Two Burners, Each Burner Has A Maximum Heat Input Rating Of 2.4 MMBtu/Hr.

~~11.10.~~ Three Crude Oil Heater Treaters (Identification Numbers CTB-5, CTB-7 And CTB-8), Fired On Natural Gas, Each Unit Equipped With Two Burners, Each Burner Has A Maximum Heat Input Rating Of 6.3 MMBtu/Hr.

~~12.11.~~ Recovery Gas Treatment Plant Including Sulfatreat Vessels And Enclosed Ground Flare.

~~13.12.~~ Oil Treating Facility Including Truck Loadout.

~~14.13.~~ Waste Water Facility Including Water Reclamation Plant.

~~15.14.~~ Ancillary Equipment:

Gasoline Dispensing Facility.

Laboratory Fume Hood.

APPLICABLE FEDERAL REQUIREMENTS

The proposed project will not affect the applicability of the federal requirements to the facility. Below is the list of applicable requirements for the facility.

Applicable Requirement	Equipment Affected
Rule 200, Permits Required	Facility Wide
Rule 207, Review of New or Modified Sources (4/20/11)	Facility Wide
Rule 207, Review of New or Modified Sources (2/15/17)	Facility Wide
Rule 213, Continuous Emissions Monitoring	Gas Turbines
Rule 214, Breakdown Condition	Facility Wide
Rule 218, Title V: Federal Operating Permits	Facility Wide
Rule 300, District Fees	Facility Wide
Rule 400, Visible Emissions	Facility Wide
Rule 403, Particulate Matter	Gas Turbines, Steam Generators & Crude Oil Heaters Treaters
Rule 404, Sulfur Compounds and Nitrogen Oxides	Gas Turbines, Steam Generators & Crude Oil Heaters Treaters
Rule 412, Sulfur Content Fuels	Gas Turbines, Steam Generators & Crude Oil Heaters Treaters
Rule 413, Removal of Sulfur Compounds	Gas Turbines, Steam Generators & Crude Oil Heaters Treaters
Rule 416, Solvents	Facility Wide
Rule 417, Storage of Organic Liquids	Oil Treating Facility, Waste Water Facility & Gasoline Dispensing Facility
Rule 418, Transfer of Gasoline into Stationary Storage Containers	Gasoline Dispensing Facility
Rule 420, Effluent Oil Water Separators	Waste Water Facility
Rule 426, Architectural Coatings	Facility Wide
Rule 427, Steam Drive Crude Oil Production Wells	Facility Wide
Rule 1002, Transfer of Gasoline into Vehicle Fuel Tanks	Gasoline Dispensing Facility
40 CFR Part 60, Subpart A, New Source Performance Standards (NSPS), General Provisions	Facility Wide
40 CFR Part 60, Subpart Dc, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units	Steam Generators
40 CFR Part 60, Subpart GG, Standards of Performance for Stationary Gas Turbines	Gas Turbines
40 CFR Part 60, Subpart KKKK, Standard of Performance for Stationary Combustion Turbines	Gas Turbines

Applicable Requirement	Equipment Affected
40 CFR Part 60, Subpart OOOO, Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced after August 23, 2011, and on or before September 18, 2015	Facility Wide
40 CFR Part 60, Subpart OOOOa, Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015	Facility Wide
40 CFR Part 63, Subpart YYYY, NESHAP for Stationary Combustion Turbines	Gas Turbines
40 CFR Part 63, Subpart DDDDD, NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters	Steam Generators
40 CFR Part 63, Subpart JJJJJ, NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources	Steam Generators
40 CFR Part 64, Compliance Assurance Monitoring	Gas Turbines & Steam Generators

COMPLIANCE DETERMINATION FOR APPLICABLE FEDERAL REQUIREMENTS

Rule 200 – Permits Required

Part 3 Requires an ATC prior to building, erecting, altering, or replacing any article, machine, equipment, or other contrivance, which may cause the issuance or reduction of air contaminants. Exceptions to District Rule 200 are identified in District Rule 201. The facility has complied with the requirements of this rule, and continued compliance is expected.

Rule 201 – Sources Not Requiring Permits

The purpose of this Rule is to provide a list of source and equipment categories which are exempt from the requirements of District Rule 200 (Permits Required) to obtain an Authority to Construct (ATC) or Permit to Operate (PTO). The exemptions provided in Part 3 of this Rule apply to the requirements of Rule 200 (Permits Required) to obtain an ATC or PTO. The exemptions do not apply to any requirement for facility operators to register with the District, for purposes of emission or source inventorying, or to any other District requirements.

Rule 207 – Review of New or Modified Sources (4/20/11)

The purpose of this Rule is to provide for the review of new and modified stationary air pollution sources to meet: requirements for the review of new and modified stationary sources (NSR) and for the Prevention of Significant Deterioration (PSD), under the provisions of the federal Clean Air Act; and requirements for NSR under the provisions of the California Clean Air Act

Rule 207 applies to all new stationary sources and all modifications to existing stationary sources which, after construction or modification, emit or have the potential to emit any affected pollutants. . The proposed reduction in the frequency of the performance testing for the steam generator does not meet the definition of a modification of Section 2.33. In addition, since the proposed project will not increase the emissions from the steam generators, the requirements of this Rule do not apply.

This facility and some of the equipment predate the NSR requirements. Newer equipment has undergone New Source Review (NSR); therefore, conditions on these NSR permits are federally enforceable and are included on this permit.

District Rule 207 – Review of New or Modified Sources (as adopted on 2/15/17)

The purpose of this Rule is to provide for the review of new and modified stationary air pollution sources to meet the New Source Review requirements under the provisions of the California Clean Air Act. This Rule provides mechanisms by which Authorities to Construct may be granted to such sources without interfering with the attainment or maintenance of California ambient air quality standards. Each project subject to New Source Review shall undergo a review under the federal requirements contained within Rule 220 and Rule 221, and a parallel review under the requirements of this Rule and the most stringent applicable provisions shall apply.

Rule 207 applies to all new stationary sources and all modifications to existing stationary sources, which after construction or modification, emit or have the potential to emit any affected pollutants. The proposed reduction in the frequency of the performance testing for the steam generator does not meet the definition of a modification of Section 2.33. In addition, since the proposed project will not increase the emissions from the steam generators, the requirements of this Rule do not apply.

Rule 213 – Continuous Emissions Monitoring

The requirements of Rule 213 apply to electric power generation equipment subject to Title IV (Acid Deposition Control) of the federal Clean Air Act with nameplate generation capacities of at least 25 megawatts (MW); to fossil fuel-fired steam generators with a rated heat input of 250 million British thermal units (MMBtu) or greater per hour; and to any source required to install CEMS as required to prove compliance with air pollution requirements pursuant to an authority to construct or permit to operate.

The Cogen facilities have a rated heat input of have a nameplate capacity of 3.2 MW and the heat recovery steam generators have a rated heat input of less than 250 MMBtu per hour. Thus, Aera is not subject to the CEMS requirements of Rule 213.

Rule 214 – Breakdown Condition

The requirements of Rule 214 apply to any breakdown, which results in a violation of any State law, District Regulation, permit, or Hearing Board order.

Permit conditions are included on the permit to comply with the requirements of Rule 214.

Rule 218 – Title V: Federal Operating Permits

The purpose of this Rule is to provide for the issuance of Federal Operating Permits (FOPs) which contain all federally enforceable requirements for stationary sources as required under the provisions of Title V of the Federal Clean Air Act and amendments (the Act).

Pursuant to Rule 218 Section 2.27.3, a modification to a federally enforceable condition on a permit to

operate which significantly changes monitoring conditions or provides a relaxation of any record keeping condition is a significant permit modification to the Title V permit. The proposed reduction in the frequency of the performance testing for the steam generator from quarterly to annual is a relaxation of the monitoring and record keeping requirement and is considered a significant modification. Aera has applied to modify their Title V permit.

In their original application, the facility requested a permit shield from certain applicable requirements, which are addressed in this evaluation. As required by this rule, a provision will be included on the permit, which specifies which applicable requirements the facility is shielded from and basis for the permit shield.

Permit conditions are included on the permit to comply with Rule 218.

Rule 300 – District Fees (Section 4.4 Emission Statement)

This Rule shall apply to all owners and operators of stationary sources which are required by District Rule 200 (Permits Required) to obtain an ATC or PTO; and to requesters of District services, materials, or equipment. The facility is subject to the Emission Statement as required by Section 182(a)(3)(B)(ii) of the Federal Clean Air Act. Historically, the facility has submitted the required Emission Statement.

Permit conditions are included on the permit to comply with the requirements of Rule 300.

Rule 308 – Title V: Federal Operating Permit Fees

The provisions of this Rule shall apply to any facility that is required to apply for and maintain a Federal Operating Permit pursuant to Rule 218 (Title V: Federal Operating Permits). Appropriate conditions will be included on the Title V permit to ensure compliance with the fee provisions contained in this rule.

Rule 400 – Visible Emissions

The provisions of this Rule shall apply to all sources of air pollutant emissions in the District. The purpose of this Rule is to provide limits for the visible emissions from sources within the District.

Permit conditions are included on the permit to comply with Rule 400.

Rule 403 – Particulate Matter

The purpose of this Rule is to provide particulate matter emission limits for sources operating within the District. The provisions of this Rule shall apply to any source discharging particulate matter while operating within the Air District. Section 1.3.1 exempts stationary internal combustion engines from meeting the requirements of this Rule. Pursuant to Section 3.1, a person shall not discharge from any source whatsoever particulate matter in excess of 0.15 grain per standard dry cubic foot of exhaust gas.

Cogeneration Facilities – Based upon the requirements of Rule 403, the volumetric flow rate of 29,700 SDCFM for the gas turbines would establish an emission limit of 38.2 lbs PM/hr [(29,700 SDCFM) (0.15 grains/SDCF) (1 lb/7,000 grains) (60 M/Hr) = 38.2 lbs PM/hr]. From the NSR permits, the PM emission limit for each of the turbines is 0.81 lbs/hr, which is well below the Rule 403 standard. Therefore, no monitoring/testing or record keeping will be included on the permit to show compliance with the grain loading requirement for this equipment.

Steam Generators, 62.5 MMBtu/hr, Natural Gas Fired – Based upon the requirements of Rule 403, the volumetric flow rate of 9,000 SDCFM for these steam generators would establish an emission limit of 11.6

lbs PM/hr [(9,000 SDCFM) (0.15 grains/SDCF) (1 lb/7,000 grains) (60 M/Hr) = 11.6 lbs PM/hr]. AP-42 establishes an emission limit of 7.6 lbs PM/MMCF (from Table 1.4-2 dated 7/98) which would equate to an hourly emission of 0.45 lbs PM/hr [(62.5 MMBtu/hr) (1 MMCF/1,050 MMBtu) (7.6 lbs PM/MMCF) = 0.45 lbs PM/hr]. This calculated value is well below the Rule 403 grain loading standard. Therefore, no monitoring/testing or record keeping will be included on the permit to show compliance with the grain loading requirement for this equipment.

Steam Generators, 85 MMBtu/hr, Natural Gas Fired – Based upon the requirements of Rule 403, the volumetric flow rate of 12,340 SDCFM for these steam generators would establish an emission limit of 15.9 lbs PM/hr [(12,340 SDCFM) (0.15 grains/SDCF) (1 lb/7,000 grains) (60 M/Hr) = 15.9 lbs PM/hr]. AP-42 establishes an emission limit of 7.6 lbs PM/MMCF (from Table 1.4-2 dated 7/98) which would equate to an hourly emission of 0.62 lbs PM/hr [(85 MMBtu/hr) (1 MMCF/1,050 MMBtu) (7.6 lbs PM/MMCF) = 0.62 lbs PM/hr]. This calculated value is well below the Rule 403 grain loading standard. Therefore, no monitoring/testing or record keeping will be included on the permit to show compliance with the grain loading requirement for this equipment.

Steam Generators With Scrubber Systems – Based upon the requirements of Rule 403, the volumetric flow rate of 9,000 SDCFM for these steam generators would establish an emission limit of 11.6 lbs PM/hr [(9,000 SDCFM) (0.15 grains/SDCF) (1 lb/7,000 grains) (60 M/Hr) = 11.6 lbs PM/hr]. The combined emission limit for steam generators 30-6 & 30-10A (units described in Equipment Description #5) is 11.0 lb PM/hr. Steam generator 30-9 is limited to an emission rate of 0.5 lb/hr. The Title V requires performance testing for PM emissions from these steam generators. Thus, the steam generators with wet scrubbers meet the requirements of this Rule.

Crude Oil Heater Treaters – Based upon the requirements of Rule 403, the volumetric flow rate of 1,220 SDCFM firing natural gas would establish an emission limit of 1.6 lbs PM/hr on natural gas [(1,220 SDCFM) (0.15 grains/SDCF) (1 lb/7,000 grains) (60 M/Hr) = 1.6 lbs PM/hr]. AP-42 establishes an emission limit of 7.6 lbs PM/MMCF NG (from Table 1.4-2 dated 7/98) which would equate to an hourly emission of 0.09 lbs PM/hr while firing on natural gas [(12.6 MMBtu/hr) (1 MMCF/1,050 MMBtu) (7.6 lbs PM/MMCF) = 0.09 lbs PM/hr]. The gas emissions calculated based on AP-42 factors well are below the Rule 403 grain loading requirement. Therefore, no monitoring/testing or record keeping will be included on the permit to show compliance with the grain loading requirement for this equipment.

Rule 404 – Sulfur Compounds and Nitrogen Oxides

The provisions of this Rule shall apply to sources of sulfur compounds, nitrogen oxides, and nitrogen dioxide subject to District Rule 200 *Permits Required*. Pursuant to Section 3.1, no person shall discharge from any single emission unit any one or more of the following contaminants in any state or combination thereof, exceeding in concentration or amount at the point of discharge to the atmosphere; sulfur compounds calculated as sulfur dioxide (SO₂), 0.2 percent by volume and nitrogen oxides, calculated as nitrogen dioxide (NO₂), 140 pounds per hour from any new or expanded boiler, furnace, jet engine, or similar fuel burning equipment used for the production of power or heat.

Cogeneration Facilities – Compliance with the 0.2% by volume (2,000 ppmv) limit for SO₂ is assured due to these units being fired exclusively on natural gas and based upon the SO₂ limit contained in the NSR permit of 0.1 lb/hr. The SO₂ concentration at this permitted emission level would be 0.34 ppmv [(0.1 lbs SO₂/hr) (lbmole/64.1 lb SO₂) (385 ft³/lbmole) (min/29,700 ft³) (hr/60 min) (1E06) = 0.34 ppmv]. This value is well below the 2,000 ppmv SO₂ allowed in this rule.

Compliance with the 140 lb/hr NO_x limit is assured due to the emission limit contained in the NSR permits.

The NO_x limit contained in the NSR permits is 3.8 lbs/hr.

Therefore, the Rule 404 emission limits will be subsumed under the NSR limits for the cogeneration facilities which will be included on the Title V permit.

Steam Generators, Natural Gas Fired – Compliance with the 0.2% by volume (2,000 ppmv) limit for SO₂ is assured due to these units being fired exclusively on natural gas. Therefore, no monitoring/testing or record keeping requirements will be included on the permit to show compliance with the 0.2% by volume SO₂ limit for this equipment.

62.5 MMBtu/hr Steam Generators – Compliance with the 140 lb/hr limit is assumed due to the following emission calculations based upon the AP-42 emission factors of 140 lbs NO_x/MMCF natural gas burned (from AP-42 Table 1.4-2 dated 1/95). The steam generators are rated at 62.5 MMBtu/Hr which equates to 8.3 lbs/hr [(62.5 MMBtu/Hr)(1 MMCF/1,050 MMBtu)(140 lbs/MMCF) = 8.3 lbs NO_x/Hr]. The steam generators are not capable of exceeding the 140 lb hour NO_x limit.

85 MMBtu/hr Steam Generators – Compliance with the 140 lb/hr limit is assured due to the NSR limits included in the permit. The limit is 0.93 lbs/hr, which is well below the rule limits. Therefore, no monitoring/testing or record keeping requirements will be included on the permit to show compliance with the 140 lb/hr NO_x limit for the natural gas fired steam generators.

Steam Generators With Scrubber Systems – For steam generators 30-6 and 30-10A, compliance with the 0.2% by volume (2,000 ppmv) limit is assured due to the combined SO₂ limit contained on the NSR permits of 19.0 lbs/hr from both units. The SO₂ concentration at this permitted emissions level would be 211.33 ppmv [(19.0 lb SO₂/hr) (lbmole/64.1 lb) (385 ft³/lbmole) (min/9,000 ft³) (hr/60 min) (1E06) = 211.33 ppmv]. This value is well below the 2,000 ppmv SO₂ allowed in this Section. For steam generator 30-9, compliance with the 0.2% by volume (2,000 ppmv) limit for SO₂ is assured due to the SO₂ limit contained on the NSR permit of 1.04 lb/hr. The SO₂ concentration at this permitted emission level would be 11.57 ppmv [(1.04 lb SO₂/hr) (lbmole/64.1 lb) (385 ft³/lbmole) (min/9,000 ft³) (hr/60 min) (1E06) = 11.57 ppmv]. This value is well below the 2,000 ppmv SO₂ allowed in this Section.

Compliance with the 140 lb/hr NO_x limit is assured due to the emission limit contained in the NSR permits. For steam generators 30-6 & 30-10A, the NSR permits limit the combined hourly emissions to 12.5 lb NO_x/hr, which is well below the allowed rate of 140 lb NO_x/hr of this Section. For steam generator 30-9, the NSR permit limit the hourly emissions to 6.25 lb NO_x/hr, which is well below the allowed rate of 140 lb NO_x/hr of this Section.

Crude Oil Heater Treaters – Compliance with the 0.2% by volume (2,000 ppmv) limit for SO₂ is assumed while firing on natural gas.

Compliance with the 140 lb/hr NO_x limit is assumed due to the following emission calculation. AP-42 establishes emission factor of 100 lbs NO_x/MMCF of natural gas (from AP-42 Tables 1.3-2 dated 1/95) which would equate to an hourly emission of 1.2 lbs NO_x/hr while firing on natural gas [(12.6 MMBtu/hr)(1 MMCF/1,050 MMBtu)(100 lbs NO_x/MMCF) = 1.2 lbs NO_x/hr]. The heater treaters are not capable of exceeding the 140 lb hour NO_x limit. Therefore, no monitoring/testing or record keeping requirements will be included on the permit to show compliance with the 140 lb/hr NO_x limit for this equipment.

Pursuant to Section 3.4.1, for determination of SO₂ emissions concentrations in stack gases during stationary source tests, EPA Methods 6 or 6C, or CARB Method 100 shall be performed.

Pursuant to Section 3.4.2, for determination of NO_x emissions concentrations in stack gases during stationary source tests, EPA Method 7E or CARB Method 100 shall be performed.

Pursuant to Section 3.5, records of emissions testing shall be maintained for a period of five years after creation and shall be made available to the District upon request.

Permit conditions are included on the permit to comply with Rule 404.

Rule 412 – Sulfur Content of Fuels

The purpose of this Rule is to limit emissions of sulfur oxides from combustion sources within the District. The provisions of this Rule shall apply to all combustion sources operated within the District.

Part 3 of this Rule requires that the sulfur content of fuels combusted be less than 50 grains per 100 cubic feet for gaseous fuel and less than 0.5% by weight for liquid or solid fuel is applicable to this facility. Combustion of natural gas assures compliance with the 50 grain limit while the backup fuel is Residual Oil Number 6 with sulfur content below 0.5%. Diesel fuel combusted in the internal combustion engines is in compliance with the less than 0.5% by weight sulfur content.

Note that the combustion of casing gas is not subject to the requirements of this rule, as it is exempted from the requirements of Rule 412 by Rule 413 as discussed below.

Rule 413 – Removal of Sulfur Compounds

The purpose of this Rule is to limit emissions of sulfur oxides from combustion sources within the District. The provisions of this Rule shall apply to all combustion sources operated within the Air District.

Pursuant to District Rule 413, Part 3, the provisions of District Rule 412 shall not apply where the sulfur compounds are removed pre or post combustion, or where a mixture of fuels is used, so that the resulting emission of sulfur compounds to the atmosphere is no greater than that which would be emitted by using a liquid or solid fuel complying with District Rule 412.

The following calculations verify that the combustion of casing gas complies with Rule 413 requirements, and therefore not subject to the requirements of Rule 412. Sulfur emissions from a liquid fuel (diesel) with 0.5% by weight sulfur equate to 0.526 lbs SO₂/MMBtu [(0.5 lb Sulfur/100 lbs fuel) (1.0 lb fuel/19,000 Btu) (1E06 Btu/MMBtu) (64 lbs SO₂/32 lbs Sulfur) = 0.526 lbs SO₂/MMBtu], whereas the sulfur emissions from the combustion of casing gas are limited by the NSR permits to 152 lbs/MMCF (this is based on a 3% inlet H₂S concentration and a scrubber removal efficiency of 97%) which equates to 0.276 lbs SO₂/MMBtu [(152 lbs/MMCf) (1 Cf/550 Btu) (10⁶ Btu/MMBtu) (1 MMCF/10⁶ Cf) = 0.276 lbs SO₂/MMBtu]. The emissions of the casing gas from the steam generator with the scrubber are less than the combustion of a liquid fuel with 0.5% sulfur by weight. Therefore, no monitoring/testing or record keeping will be required to ensure compliance with the Rule 413 requirements, but testing will be required to ensure compliance with the NSR established SO₂ emission limit, which can be used as a surrogate to show continuing compliance with this rule requirement.

Rule 416 – Organic Solvents

The purpose of this Rule is to limit the emissions of volatile organic compounds (VOCs) that are used as solvents. The provisions of this Rule shall apply to any equipment or process that uses solvents, unless specifically exempted.

Appropriate conditions will be included on the permit to ensure compliance with this rule.

Rule 417 – Storage of Organic Liquids

The purpose of this Rule is to limit the emissions of organic solvent vapors from the storage of organic liquids. The provisions of this Rule shall apply to any container used to store organic liquids. This rule requires vapor loss control devices on organic storage tanks if the organic liquid stored has a true vapor pressure of 1.5 psi at actual storage conditions.

The gasoline dispensing facility and the waste water facility are not subject to the requirements of Rule 417 based upon the exemptions contained in section 1.3. The gasoline storage tank has a capacity of 4,000 gallons, while Rule 417 is only applicable to tanks greater than 150,000 liters (39,630 gallons). The actual vapor pressure of the stored liquid in waste water tanks is 0.17 psia, well below the 1.5 psia for triggering Rule 417 requirements.

The oil treating facility is subject to the requirements of this rule. The tanks at the oil treating facility are vented to the vapor recovery system meeting the requirements of section 3.1 of the rule with a minimum destruction efficiency of 95%.

Appropriate conditions will be included on the permit to ensure compliance with the provisions of this rule.

Rule 418 – Transfer of Gasoline into Stationary Storage Containers

The purpose of this Rule is to limit the emissions of vapors of gasoline from the transfer of gasoline from delivery vessels into stationary storage containers. The provisions of this Rule shall apply to any transfer of gasoline into a stationary storage container unless specifically exempted by this Rule.

This rule requires that the gasoline storage tank have a submerged fill pipe and that Phase I Vapor recovery be utilized when filling the tank. The rule also requires specific record keeping regarding the quantity of fuel delivered to the facility. The facility complies with the requirements of this rule.

Appropriate conditions will be included on the permit to ensure compliance with the requirements of this rule.

Rule 420 – Effluent Oil Water Separators

The purpose of this Rule is to limit the emissions of vapors of organic and sulfur compounds from effluent oil water separators. The provisions of this Rule shall apply to oil water separators at oil fields and petroleum refineries unless specifically exempted by the provisions of this Rule.

This rule requires vapor loss control devices on any vessel or device operated to recover oil from effluent water where 200+ gallons a day of petroleum products are recovered if the Reid vapor pressure is 0.5 psi or greater. The Reid vapor pressure of the heavy crude processed in the effluent oil water separators is 0.22 psi. Therefore, the effluent oil water separators at this facility are not subject to the requirements of this rule.

Appropriate conditions will be included on the permit to ensure compliance with the provisions of this rule if organic materials are processed that have a Reid vapor pressure equal or greater than 0.5 psi.

Rule 426 – Architectural Coatings

The purpose of this Rule is to limit the emissions of Volatile Organic Compounds (VOC) from the use of architectural coatings. The provisions of this Rule shall apply to any person who supplies, sells, offers for sale, manufacturers, blends, or repackages any architectural coating for use within this District, as well as any person who applies or solicits the application of any architectural coating within the District. The facility is in compliance with the requirements of this Rule.

Appropriate conditions are included on the permit to ensure compliance with the provisions of this rule.

Rule 427 – Steam Drive Crude Oil Production Wells

The purpose of this Rule is to limit emissions of VOC from the operation of steam drive crude oil production wells. The provisions of this Rule shall apply to any person who owns or operates any steam drive crude oil production wells. The facility is in compliance with the requirements of this rule by collecting the gas from the steam enhanced production wells and routing to the vapor recovery system. The gas is then processed by the vapor recovery system, and finally combusted as fuel in one of the steam generators. Pursuant to Section 3.1, the steam generators shall reduce the VOC emissions by at least 98 percent by weight. Compliance with this requirement shall be determined using the test methods described in Part 5.

Part 5 of this Rule specifies the test methods to use to determine the efficiency of the control device. Section 5.1 states that the efficiency of vapor control devices shall be determined using EPA Methods 2, 2A, 2C, or 2D for measuring flow rates and EPA Methods 18, 25, 25A, or 25B for measuring the total gaseous organic concentrations at the inlet and outlet of the control device.

Appropriate conditions are included on the permit to ensure compliance with the provisions of this rule.

Rule 433 – Organic Solvent Cleaning

The purpose of this Rule is to limit emissions of VOC during solvent cleaning and degreasing operations. The provisions of this Rule shall apply to the operation of all cleaning devices using volatile organic compounds for solvent cleaning and degreasing. Other standards, such as the Halogenated Solvents National Emissions Standards for Hazardous Air Pollutants, may also regulate the usage of such compounds as trichloroethylene.

Appropriate conditions are included on the permit to ensure compliance with the provisions of this rule.

Rule 1002 – Transfer of Gasoline into Vehicle Fuel Tanks

This Rule complies with California Health and Safety Code section 39666(d) by establishing control requirements for the reduction of benzene emissions from gasoline dispensing facilities. The provisions of this Rule shall apply to any new, or modified, or existing gasoline dispensing facility. This rule contains specific requirements for the installation and operation of ARB Certified Vapor Recovery (phase II) systems on gasoline dispensing facilities.

Appropriate conditions are included on the permit to ensure compliance with the provisions of this rule.

40 CFR Part 60, Subpart A – New Source Performance Standards, General Provisions

The facility is subject to the requirements of Section §60.7 (notification and record keeping), Section §60.8

(performance tests), §60.11 (compliance with standards and maintenance requirements), and §60.13 (monitoring requirements) because the facility is subject to the requirements of 40 CFR Part 60, Subparts Dc and Gg. The facility has requested that the requirements of Subpart A be subsumed under the NSR permit requirements.

The District agrees, and asserts that compliance with the conditions on the Title V permit shall be considered compliance with the monitoring, record keeping, and reporting requirements contained in 40 CFR Parts 60.7, 60.8, 60.11, and 60.13.

40 CFR Part 60, Subpart Dc, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

The requirements of this Subpart apply to each 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 MMBtu/hr (29 MW) or less, but greater than or equal to 10 MMBtu/hr (2.9 MW). Aera's steam generating equipment are subject to the requirements of this Subpart. However, no SO_x and PM requirements are imposed because no heat input is provided by coal, oil, or wood.

No conditions pertaining to this Subpart will be included on the permit.

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

The gas turbines both have a maximum heat input of 61.5 MMBtu per hour, which exceeds the applicability threshold of 10 MMBtu/hr. The gas turbine uses Selective Catalytic Reduction (SCR) and water injection to control NO_x formation.

The NO_x emission factor from Section §60.332(a)(2) would be 150 ppmvd. This 150 ppmvd limit far exceeds the NSR permit limit of 3.8 lbs NO/hr which equates to 17.8 ppmv [(3.8 lbs NO/Hr) (1E06) (385 ft³/lbmole) (lbmole/46 lb NO) (hr/60 min) (min/29,700 ft³) = 17.8 ppmv] established by District Rule 207. Therefore, the NO_x limit from the NSPS is subsumed under the NSR permit requirement that is included on the Title V permit.

The SO₂ limit from Section §60.333 would be 150 ppmv. Compliance with this limit is assumed due to these units being fired exclusively on natural gas and based upon the SO₂ limit contained in the NSR permits of 0.1 lb/hr per unit. The SO₂ concentration at this permitted emission level would be 0.34 ppmv [(0.1 lbs SO₂/Hr) (1E06) (385 ft³/lbmole) (lbmole/64.1 lb SO₂) (hr/60 min) (min/29,700 ft³) = 0.34 ppmv]. This value is well below the 150 ppmv SO₂ allowed for in the NSPS. Therefore, the SO₂ emission standard from this NSPS is subsumed under the NSR permit requirement that is included on the Title V permit.

Section §60.334(a) requires turbines using water injection to control NO_x formation to install, calibrate, maintain and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine. Per Section §60.334(b), gas turbines which use water or steam injection to control NO_x emissions may, as an alternative to operating the continuous monitoring system described by Section 60.334(a), install, certify, maintain, operate, and quality-assure a CEMS consisting of NO_x and O₂ monitors.

Aera currently operates a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine system.

Pursuant to Section §60.334(g), Aera developed a parameter monitoring plan which documents proper

operation of the water injection control systems used for NO_x emission reduction. The plan includes the parameters monitored and acceptable ranges of the parameters as well as the basis for designating the parameters and acceptable ranges for the water injection control systems. Aera is monitoring the following parameters: water/fuel ratio, ammonia (NH₃) injection rate and catalyst temperature. Table 1 shows Aera's gas turbine parameter monitoring plan.

Table 1. Gas turbine parameter monitoring plan.

Parameter:	Minimum Limit:	Maximum Limit:	Reporting:
Catalyst temperature	450°F	900°F	Average hourly
Water/Fuel ratio	0.5 lb H ₂ O/lb fuel	0.9 lb H ₂ O/lb fuel	Average hourly
NH ₃ injection rate	900 liters/hr	1,800 liters/hr	Average hourly

The monitoring plan is based upon historical source test data conducted for the gas turbines. The monitoring plan ensures compliance with the NO_x emission limits. In addition to the monitoring plan, the facility is required to conduct annual source testing of the cogeneration units, which ensures continued compliance of the emissions limits.

Appropriate conditions are included on the permit to ensure compliance with the provisions of this Subpart.

40 CFR Part 60, Subpart KKKK - Standard of Performance for Stationary Combustion Turbines

The gas turbine/HRSG sets were constructed before February 18, 2005 and are exempt from the requirements of 40 CFR Part 60 Subpart KKKK.

No conditions pertaining to this Subpart will be included on the permit.

40 CFR Part 63, Subpart YYYY - NESHAP for Stationary Combustion Turbines

The gas turbine/HRSG sets are not subject to this rule because the facility is not a major source of hazardous air pollutants.

No conditions pertaining to this Subpart will be included on the permit.

40 CFR Part 60, Subpart OOOO, NSPS for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced after August 23, 2011, and on or before September 18, 2015

The requirements of this Subpart apply to the following types of equipment that were constructed, modified, or reconstructed between August 23, 2011 and September 18, 2015:

- Gas wells
- Centrifugal compressors
- Reciprocating compressors
- Natural gas-driven pneumatic controllers with continuous bleed rate greater than 6 scfh
- Storage vessels with potential VOC emissions equal to or greater than 6 tpy (tons per year)
- Group of equipment (except compressors) within a process unit
- Sweetening units located at onshore natural gas processing plants.

Aera did not construct, modify, or reconstruct any equipment that would fall into the affected equipment under this Subpart between August 23, 2011 and September 18, 2015.

No conditions pertaining to this Subpart will be included on the permit.

40 CFR Part 60, Subpart OOOOa, Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015

The requirements of this Subpart apply to the following types of equipment that were constructed, modified, or reconstructed after September 18, 2015:

- Hydraulic fractured/refractured wells
- Centrifugal compressors
- Natural gas-driven pneumatic controllers with continuous bleed rate greater than 6 scfh
- Storage vessels with potential VOC emissions equal to or greater than 6 tpy (ton per year)
- Natural gas-driven pneumatic pumps
- Well site
- Compressor station

Aera has provided an applicability analysis for each of the equipment subject to Subpart OOOOa. Aera's analysis is shown below:

Hydraulic fractured wells

Aera has not utilized hydraulic fracturing methods on any existing well and has no future plans to hydraulically fracture a well within the San Ardo Oil Field. Therefore, this section of Subpart OOOOa is not applicable to the facility.

Centrifugal compressors

The facility has no centrifugal compressors.

Reciprocating compressors

Aera has not constructed, modified or reconstructed a reciprocating compressor within the San Ardo Oil Field since September 18, 2015. This section of Subpart OOOOa is not applicable to the facility.

Natural gas-driven pneumatic controllers

Aera has not constructed, modified or reconstructed a natural gas-driven pneumatic controller within the San Ardo Oil Field since September 18, 2015. This section of Subpart OOOOa is not applicable to the facility.

Storage vessels with potential VOC emissions greater than 6 tpy

Aera has not constructed, modified or reconstructed a storage vessel within the San Ardo Oil Field since September 18, 2015. This section of Subpart OOOOa is not applicable to the facility.

Natural gas-driven pneumatic pumps

Aera has not constructed, modified or reconstructed a natural gas-driven pneumatic pump within the San Ardo Oil Field since September 18, 2015. This section of Subpart OOOOa is not applicable to the facility.

Compressor Stations

There are no compressor stations located within Aera's San Ardo operations. This section of Subpart OOOOa is also not applicable.

The District agrees with Aera's applicability analysis for the above equipment.

In addition to the applicability analysis for the above equipment, the facility also provided applicability analysis for a "Well Site". Section §60.5430a defines a well site as one or more surface sites that are constructed for the drilling and subsequent operation of any oil well, natural gas well, or injection well. For purposes of the fugitive emissions standards at §60.5397a, well site also means a separate tank battery surface site collecting crude oil, condensate, intermediate hydrocarbon liquids, or produced water from wells not located at the well site (e.g., centralized tank batteries). Aera has determined that the facility's Oil Treatment Facility, or OTF, is subject to the requirements for fugitive emissions from well sites. The OTF is receiving fluids from wells drilled after September 18, 2015.

The Small Entity Compliance Guide for Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, the basic requirements of a fugitive emissions monitoring plan for the collection of fugitive emissions components at well sites or compressor stations within each company defined area, conducting initial and periodic monitoring, repair of any components found to be leaking, and verification (survey) that the repair was successful.

Permit conditions will be added to the permit to ensure compliance with this Subpart.

40 CFR Part 63, Subpart DDDDD, NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

Per Section §7485, the requirements of this Subpart apply to owners and operators of industrial, commercial, or institutional boilers or process heaters that are located at, or are part of, a major source of HAP as defined in Section §63.2, except as specified in Section §63.7491. For purposes of this subpart, a major source of HAP is as defined in §63.2, except that for oil and natural gas production facilities, a major source of HAP is as defined in §63.7575. Section §63.7575 states that for major source determinations for oil and natural gas production facilities, emissions from any oil or gas exploration or production well (with its associated equipment, as defined in this section), and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control.

Aera operates several boilers and heaters that may potentially be subject to the requirements of this Subpart. Below is the list of equipment operated by the facility that potentially be subject to this Subpart:

- Small heater treaters
- Large natural gas-fired steam generators

The small fuel oil or natural gas-fired boilers and heaters are used to aid separation of water and heavy crude oil through application of heat. The surface site consisting of all seven permitted heater treaters is co-located with the San Ardo Oil Treatment Facility. A list of equipment is shown in the following Table 2.

Table 2. Aera San Ardo Heater Treaters.

ID	Description	Burner rating (MMBtu/hr)	Annual fuel limit (MMBtu/yr)	Annual fuel limit notes
San Ardo Oil Treatment Facility			772,632	
CTB-1	Heater Treater	Burner 1: 6.3 Burner 2: 6.3	110,376	Annual operating time: 8,760 hr/yr
CTB-2	Heater Treater	Burner 1: 6.3 Burner 2: 6.3	110,376	Annual operating time: 8,760 hr/yr
CTB-3	Heater Treater	Burner 1: 6.3 Burner 2: 6.3	110,376	Annual operating time: 8,760 hr/yr
CTB-4	Heater Treater	Burner 1: 6.3 Burner 2: 6.3	110,376	Annual operating time: 8,760 hr/yr
CTB-5	Heater Treater	Burner 1: 6.3 Burner 2: 6.3	110,376	Annual operating time: 8,760 hr/yr
CTB-7	Heater Treater	Burner 1: 6.3 Burner 2: 6.3	110,376	Annual operating time: 8,760 hr/yr
CTB-8	Heater Treater	Burner 1: 6.3 Burner 2: 6.3	110,376	Annual operating time: 8,760 hr/yr

Aera showed that the San Ardo Oil Treatment Facility, which has a fuel capacity of 772,632 MMBtu/yr, does not have the potential to exceed 10 tons or more per year of any one HAP or 25 tons per year of any combination of HAPs. The combine HAP emissions are expected to be 0.023 tons per year. Thus, oil treatment facility is not considered a major source of HAPs and the requirements of this Subpart do not apply to these sites.

Table 3 shows the HAP potential to emit from the San Ardo heater treaters. The emission factors used are from the 1992 Western States Petroleum Association testing of a number of heater treaters to determine the air toxics for use in the California AB2588 air toxics inventory program.

Table 3. Aera San Ardo Heater Treater HAP emissions.

CAS #	Compound	HAP	Emission factor (lb/MMcf) ¹	Annual emissions (ton/yr) ²
71432	Benzene	Y	1.70E-03	0.001
108883	Toluene	Y	3.20E-02	0.012
100414	Ethyl Benzene	Y	1.10E-03	0.000
95476	Total Xylene	Y	1.90E-02	0.007
50000	Formaldehyde	Y	3.30E-03	0.001
75070	Acetaldehyde	Y	3.10E-03	0.001
107028	Acrolein	Y	2.30E-03	0.001
115071	Propylene	N	4.60E-01	
91203	Naphthalene	Y	2.37E-04	0.000
203968	Acenaphthylene	Y	1.20E-05	0.000
83329	Acenaphthene	Y	1.20E-06	0.000
86737	Fluorene	Y	4.60E-06	0.000
85018	Phenanthrene	Y	3.40E-05	0.000
120127	Anthracene	Y	1.40E-06	0.000
218019	Chrysene	Y	1.00E-06	0.000

CAS #	Compound	HAP	Emission factor (lb/MMcf) ¹	Annual emissions (ton/yr) ²
56553	Benz(a)anthracene	Y	1.00E-06	0.000
205992	Benzo(b)fluoranthene	Y	5.60E-07	0.000
205823	Benzo(j)fluoranthene	Y	1.20E-05	0.000
207089	Benzo(k)fluoranthene	Y	5.60E-07	0.000
50328	Benzo(a)pyrene	Y	5.60E-07	0.000
193395	Indeno(1,2,3-c,d)pyrene	Y	5.60E-07	0.000
53703	Dibenzo(a,h)anthracene	Y	5.60E-07	0.000
191242	Benzo(g,h,i)perylene	Y	8.70E-07	0.000
	PAH	Y	7.60E-05	0.000
Total HAPs emissions (ton/yr):				0.023

¹ Emission factors obtained from the 1992 WSPA Pooled Source Testing for AB2588, Table 1, Texaco Heater Treater.

² Emissions based on annual fuel limit of 772,632 MMBtu/hr and the AP-42 natural gas heating value of 1,020 Btu/Scf. Sample calculation for formaldehyde: (3.30E-02 lb/MMcf) (772,632 MMBtu/yr) (MMcf/1,020 MMBtu) (ton/2,000 lb) = 0.001 ton/yr

The large natural gas-fired boilers are used to provide steam to the petroleum reservoir to enhance the production of heavy crude oil. The steam generators are grouped in two distinct surface sides dedicated to steam generation activities. Aera provided the list of steam generators located at each of the two steam generation sites and is shown in Table 4.

Table 4. Aera San Ardo Steam Generator Sites.

ID	Description	Burner rating (MMBtu/hr)	Annual fuel limit (MMBtu/yr)	Annual fuel limit notes
San Ardo Generator Site 12			5,956,800	
12-2	Steam Generator	85	744,600	Annual operating time: 8,760 hr/yr
12-3	Steam Generator	85	744,600	Annual operating time: 8,760 hr/yr
12-4	Steam Generator	85	744,600	Annual operating time: 8,760 hr/yr
12-5	Steam Generator	85	744,600	Annual operating time: 8,760 hr/yr
12-7	Steam Generator	85	744,600	Annual operating time: 8,760 hr/yr
12-8	Steam Generator	85	744,600	Annual operating time: 8,760 hr/yr
12-9	Steam Generator	85	744,600	Annual operating time: 8,760 hr/yr
12-10	Steam Generator	85	744,600	Annual operating time: 8,760 hr/yr
San Ardo Generator Site 30			2,934,600	
30-1	Steam Generator	85	744,600	Annual operating time: 8,760 hr/yr
30-6	Steam Generator	62.5	547,500	Annual operating time: 8,760 hr/yr
30-9	Steam Generator	62.5	547,500	Annual operating time: 8,760 hr/yr
30-10A	Steam Generator	62.5	547,500	Annual operating time: 8,760 hr/yr
30-13	Steam Generator	62.5	547,500	Annual operating time: 8,760 hr/yr

Aera showed that the San Ardo Generator Site 12, which has the largest permitted steam generation capacity at 5,956,800 MMBtu/yr, does not have the potential to exceed 10 tons or more per year of any one HAP or 25 tons per year of any combination of HAPs. The combine HAP emissions are expected to be 0.202 tons per year. Since the San Ardo Generator Site 12 does not exceed the HAP major source thresholds, San Ardo Generator Site 30 is expected to have HAP emissions lower than the major source thresholds. Thus, neither steam generator site is considered a major source of HAPs and the requirements of this Subpart do not apply to these sites.

Table 5 shows the HAP potential to emit from the San Ardo Generator Site 12. The emission factors used are from the 1992 Western States Petroleum Association testing of a number of steam generators to determine the air toxics for use in the California AB2588 air toxics inventory program.

Table 5. HAPs emissions for San Ardo Generator Site 12.

CAS #	Compound	HAP	Emission factor (lb/MMcf) ¹	Annual emissions (ton/yr) ²
71432	Benzene	Y	1.60E-03	0.005
10883	Toluene	Y	2.00E-02	0.058
100414	Ethyl Benzene	Y	1.20E-02	0.035
95476	Total xylene	Y	2.50E-02	0.073
50000	Formaldehyde	Y	4.10E-03	0.012
75070	Acetaldehyde	Y	3.00E-03	0.009
107028	Acrolein	Y	3.00E-03	0.009
115071	Propylene	N	6.00E-01	N/A
91203	Naphthalene	Y	1.87E-04	0.001
203968	Acenaphthylene	Y	3.70E-07	0.000
83329	Acenaphthene	Y	5.40E-07	0.000
86737	Fluorene	Y	2.40E-06	0.000
85018	Phenanthrene	Y	1.20E-05	0.000
120127	Anthracene	Y	2.40E-06	0.000
206440	Fluoranthene	Y	1.40E-06	0.000
12900	Pyrene	Y	2.00E-06	0.000
218019	Chrysene	Y	1.13E-06	0.000
56553	Benz(a)anthracene	Y	1.30E-06	0.000
205992	Benzo(b)fluoranthene	Y	3.70E-07	0.000
207089	Benzo(k)fluoranthene	Y	3.70E-07	0.000
50328	Benzo(a)pyrene	Y	3.70E-07	0.000
193395	Indeno(1,2,3-c,d)pyrene	Y	3.70E-07	0.000
53703	Dibenzo(a,h)anthracene	Y	3.70E-07	0.000
191242	Benzo(g,h,i)perylene	Y	3.70E-07	0.000
	PAH	Y	2.70E-05	0.000
Total HAPs emissions (ton/yr):				0.202

¹ Emission factors obtained from the 1992 WSPA Pooled Source Testing for AB2588. Table 2, Mobil Steam Generators.

² Emissions based on annual fuel limit of 5,956,800 MMBtu/hr and the AP-42 natural gas heating value of 1,020 Btu/Scf. Sample calculation for formaldehyde: (4.1E-03 lb/MMcf) (5,956,800 MMBtu/yr) (MMcf/1,020 MMBtu) (ton/2,000 lb) = 0.012 ton/yr.

No conditions pertaining to this Subpart are included on the permit.

40 CFR Part 63, Subpart JJJJJ, NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources

The requirements of this subpart apply to owners or operators of industrial, commercial, or institutional boilers as defined in §63.11237 that are located at, or is part of, an area source of HAPs, as defined in §63.2, except as specified in §63.11195. As demonstrated above, the steam generator sites are not major sources

of HAPs and are potentially subject to the requirements of this subpart.

Per Section §63.11195(e), gas-fired boilers are not subject to this Subpart. No conditions pertaining to this Subpart are included on the permit.

40 CFR Part 64 - Compliance Assurance Monitoring

Per Section §64.2(a), an emission unit is subject to 40 CFR 64, Compliance Assurance Monitoring, if the unit is subject to a federally enforceable requirement for a pollutant, the pollutant is controlled by an abatement device, and the emissions of the pollutant before abatement are more than 100% of the major source thresholds.

Cogeneration Facilities – For the purposes of 40 CFR Part 64, each gas turbine/HRSG set is considered an emission unit. The District examined the gas turbine pre-control potential to emit for NO_x, CO, SO_x, PM and VOC to determine the applicability the Compliance Assurance Monitoring (CAM) requirements. The pre-control emissions from the gas turbine/HRSG set were estimated using the emission factors from US EPA AP-42. Table 6 shows the gas turbine pre-control yearly emissions based on AP-42 emission factors for natural gas-fired turbines with water-steam injection (Table 3.1-1 and Table 3.1-2a dated 4/00).

Table 6. Gas turbine pre-control yearly emissions.

Pollutant:	Gas turbine rating (MMBtu/hr)	Emission factors ¹ (lb/MMBtu)	Hours of operation per year (hr/yr)	Maximum emissions (ton/yr)
NO _x	61.5	0.13	8,760	35.02
CO	61.5	0.030	8,760	8.08
SO _x	61.5	3.40E-03	8,760	0.92
PM	61.5	6.60E-03	8,760	1.78
VOC	61.5	2.10E-03	8,760	0.57

¹Emissions factors from AP-42 Chapter 3.1, Table 3.1-1 and Table 3.1-2a (April 2000). Used emission factors for turbines with water-steam injection for NO_x and CO.

Table 7 shows the yearly emissions from the heat recovery steam generator (HRSG) based on AP-42 emission factors for natural gas fired small boilers rated <100 MMBtu/hr (Table 1.4-1 dated 7/98).

Table 7. HRSG with duct burner pre-control yearly emissions.

Pollutant:	Duct burner rating (MMBtu/hr)	Emission factors ¹ (lb/MMBtu)	Hours of operation per year (hr/yr)	Maximum emissions (ton/yr)
NO _x	38.7	9.80E-02	8,760	16.61
CO	38.7	8.24E-02	8,760	13.97
SO _x	38.7	5.88E-04	8,760	0.10
PM	38.7	7.45E-03	8,760	1.26
VOC	38.7	5.39E-03	8,760	0.91

¹Emissions factors from AP-42 Chapter 1.4 (July 1998).

Table 8 shows the pre-control yearly emissions from the gas turbine/HRSG set. As shown in Table 8 the pre-control emissions are below the major source thresholds. Thus, CAM requirements do not apply to the

gas turbine/HRSG set.

Table 8. Gas turbine/HRSG set yearly pre-control emissions.

Pollutant:	Maximum emissions (ton/yr)
NO _x	51.63
CO	22.05
SO _x	1.02
PM	3.04
VOC	1.48

Steam Generator 30-6 and 30-10A – These steam generators are equipped with a common post-incineration flue gas sulfur scrubber for the control of SO_x emissions. The units are permitted to fire a mixture of natural gas and vapor recovery gas produced in association with Aera’s oil production. Pre-control potential to emit for each generator is based on burning the maximum possible volume of vapor recovery gas within actual operational constraints. This approach is used because the sulfur content of the vapor recovery gas is the determining factor in the pre-control sulfur content of the steam generator exhaust. The maximum possible volume of vapor recovery gas will result in the maximum SO_x emissions.

The amount of vapor recovery gas that can be burned in a steam generator is limited by a combination of three main factors. These factors are the amount of vapor recovery gas available, the amount of vapor recovery gas that a steam generator can burn before the combustion becomes unstable, and any permit limit on the amount of gas that can be burned in the generator. Using this volume and the typical sulfur content of the vapor recovery gas, the pre-control potential to emit is calculated as follows:

$$PreControl: SO_2 \left(\frac{ton}{yr} \right) = \left(\frac{S \text{ ppm}}{1,000,000} \right) \times \left(\frac{VaporRecoveryGas, scf}{year} \right) \times \left(\frac{lbmol S}{385 \text{ scf S}} \right) \times \left(\frac{64 \text{ lb } SO_2}{lbmole S} \right) \times \left(\frac{ton}{2,000 \text{ lb}} \right)$$

Where:

$$S = \text{typical sulfur content as } H_2S = 9,000 \text{ ppm (provided by facility)}$$

$$Vapor \text{ Recovery Gas} = \text{Maximum vapor recovery gas} = 289 \frac{MMCF}{year} \text{ (provided by the facility)}$$

$$PreControl: SO_2 \left(\frac{ton}{yr} \right) = 216 \text{ tons } SO_2/year$$

Based on the information provided by the facility, the expected pre-control emissions are 216 tons per year. Thus, steam generators 30-6 and 30-10A are subject to the requirements of 40 CFR Part 64. Compliance with the SO_x emission limits is indirectly monitored by measuring the water recycle rate and the pH of the scrubber water. Previous source tests and operations data show that a minimum pH of 6.6 and a minimum water recycle rate of 700 gpm verify compliance with the permitted SO_x limits. At least one data point each for the pH and the water recycle rate will be collected once a day. Methodology for monitoring will be a pH meter and a flow measuring device.

Steam Generator 30-9 – The steam generator is permitted to fire a mixture of natural gas and vapor recovery gas produced in association with Aera’s oil production. The unit is also equipped with a post-incineration

scrubber and has the same potential to emit SO_x emissions as steam generators 30-6 and 30-10A. Thus, the unit is subject to the requirements of 40 CFR Part 64. Compliance with the SO_x emission limits is indirectly monitored by measuring the water recycle rate and the pH of the scrubber water. The permit requires that a minimum pH of 4.6 and a minimum water recycle rate of 200 gpm to verify compliance with the permitted SO_x limits. Since this equipment is not presently operating, these parameters will need to be re-defined and submitted to the District within 60 days of start-up of this equipment.

Appropriate conditions are included on the permit to ensure compliance with the provisions of this Subpart.

PERMIT SHIELD

District Rule 218 allows for creation of a permit shield provision. A permit shield is a provision stating that compliance with the conditions of the FOP shall be deemed compliance with any applicable requirements as of the date of FOP issuance.

The facility is not proposing any changes to the permit shield.

THE FOLLOWING WILL BE INCLUDED ON THE TITLE V PERMIT:

The permit conditions listed on the Title V Permit are derived from District issued Authorities to Construct or Permits to Operate. The permit also includes the regulatory basis for each permit condition. Permit conditions are divided into the following sections: permit shield, federally enforceable limits and standards, testing requirements and procedures, record keeping requirements, reporting requirements, and general conditions.

FEDERALLY ENFORCEABLE EMISSION LIMITS AND STANDARDS

Aera is not proposing to any changes to the federally enforceable emission limits and standards. The District is proposing to add a permit condition from steam generator 30-9, unit identified in Equipment Description 6, derived during the NSR process for the permit.

Proposed new condition for steam generator 30-9:

- Total produced gas combusted in steam generators 30-6, 30-9 and 30-10A shall not exceed 3.8 MMCFD for the three (3) units combined. [District Rule 207]

TESTING REQUIREMENTS AND PROCEDURES

Aera has submitted a permit application requesting the modification of the source testing permit condition for the steam generators equipped with wet scrubber system, current condition #53. The request is for the following:

Aera's proposed modification to Condition #53:

53. *Performance tests of each operational steam generator with scrubber shall be conducted ~~quarterly~~ annual. Aera Energy LLC shall conduct performance tests in accordance with EPA Method 20 or*

CARB Method 100 for SO₂, NO_x and O₂, EPA Method 10 or CARB Method 100 for CO, and EPA Method 18 or CARB Method 100 for hydrocarbons to verify compliance with condition numbers 8 through 13. Aera Energy LLC shall furnish the District written results of such performance tests within sixty (60) days of the test completion. A testing protocol shall be submitted to the District no later than 30 days prior to testing, and District notification at least 10 days prior to the actual date of testing shall be provided so that a District observer can be present. The compliance test shall include, but not be limited to, the determination of the following parameters [District Rule 207]:

- a) *Sulfur Dioxide: ppmv at 3% O₂, dry, lb_m/hr, and lb_m/MMCF.*
- b) *Oxides of Nitrogen, as NO₂: ppmv at 3% O₂, dry, lb_m/hr, and lb_m/MMCF.*
- c) *Carbon Monoxide: ppmv at 3% O₂, dry, lb_m/hr, and lb_m/MMCF.*
- d) *Total hydrocarbons and volatile organic compounds (VOC): ppmv, lb_m/hr, and lb_m/MMCF.*

and the following process parameters:

- e) *pH of the scrubber water feed and effluent, the scrubber water flow rate, and for Unit 30-9 only, the number of trays in the scrubber as tested.*
- f) *Fuel(s) being fired, rate (SDCFM) and proportion of each.*

In ~~the second and fourth calendar quarter each year, in~~ addition to the tests specified above, testing shall be completed to determine the following exhaust parameters:

- g) *Total Particulate: gr/sdcf, lb_m/hr, lb_m/MMCF, and PM₁₀ fraction.*

The ~~quarterly annual~~ tests shall be conducted such that the exhaust parameters, as specified within this condition, are determined for steam generators 30-6 and 30-10A at least once per calendar year.

District's response to Aera's proposed modification of Condition #53:

The District supports the reduction in frequency of the performance testing from a quarterly basis to an annual basis. In addition to the frequency modification, the District is proposing to revise the language for the following:

- Make it clear that if the equipment will not be operational during any given year, no annual performance test is required;
- Pursuant to District Rule 404, Section 3.4.1, EPA Method 6 or 6C can also be used to test for SO₂ emissions.
- Pursuant to District Rule 404, Section 3.4.2, EPA Method 7E can also be used to test for NO_x emissions.

District's proposed modification of Condition #53:

53. *Performance tests of each operational steam generator with scrubber, as described in Equipment*

~~Description 5 and 6, shall be conducted quarterly on or prior to December 31 of each year. If the steam generators have not been and will not be operational during a given calendar year, no annual performance test is required. Aera Energy LLC shall conduct performance tests in accordance with EPA Method 20 or CARB Method 100 for SO₂, NO_x and O₂, EPA Method 10 or CARB Method 100 for CO, and EPA Method 18 or CARB Method 100 for hydrocarbons to verify compliance with condition numbers 8 through 13. Aera Energy LLC shall furnish the District written results of such performance tests within sixty (60) days of the test completion. A testing protocol shall be submitted to the District no later than 30 days prior to testing, and District notification at least 10 days prior to the actual date of testing shall be provided so that a District observer can be present. The compliance test shall include, but not be limited to, the determination of the following parameters [District Rule 207]: Aera Energy LLC shall conduct performance tests in accordance with EPA Method 6, EPA Method 6C, EPA Method 20 or CARB Method 100 for SO₂, EPA Method 7E, EPA Method 20 or CARB Method 100 for NO_x, EPA Method 20 or CARB Method 100 for O₂, EPA Method 10 or CARB Method 100 for CO, and EPA Method 18, EPA Method 25, EPA Method 25A or EPA Method 25B for nonmethane hydrocarbons to verify compliance with condition numbers 8 through 13.~~

A testing protocol shall be submitted to the District no later than 30 days prior to testing, and District notification at least 10 days prior to the actual date of testing shall be provided so that a District observer can be present. Aera Energy LLC shall furnish the District written results of such performance tests within sixty (60) days of the test completion. The compliance test shall include, but not be limited to, the determination of the following parameters: [Basis: District Rule 207 and District Rule 404]

- a) Sulfur Dioxide: ppmv at 3% O₂, dry, lb_m/hr, and lb_m/MMCF.
- b) Oxides of Nitrogen, as NO₂: ppmv at 3% O₂, dry, lb_m/hr, and lb_m/MMCF.
- c) Carbon Monoxide: ppmv at 3% O₂, dry, lb_m/hr, and lb_m/MMCF.
- d) Total nonmethane hydrocarbons and volatile organic compounds (VOC): ppmv, lb_m/hr, and lb_m/MMCF.
- e) Total Particulate: gr/sdcf, lb_m/hr, lb_m/MMCF, and PM₁₀ fraction.

and the following process parameters:

- e/f) pH of the scrubber water feed and effluent, the scrubber water flow rate, and for Unit 30-9 only, the number of trays in the scrubber as tested.
- f/g) Fuel(s) being fired, rate (SDCFM) and proportion of each.

~~In the second and fourth calendar quarter each year, in addition to the tests specified above, testing shall be completed to determine the following exhaust parameters:~~

- ~~g) Total Particulate: gr/sdcf, lb_m/hr, lb_m/MMCF, and PM₁₀ fraction.~~

~~The quarterly tests shall be conducted such that the exhaust parameters, as specified within this condition, are determined for steam generators 30-6 and 30-10A at least once per calendar year.~~

MONITORING AND RECORD KEEPING REQUIREMENTS

Aera is not proposing to any changes to the monitoring and record keeping requirements.

REPORTING REQUIREMENTS

Aera is not proposing to any changes to the reporting requirements.

GENERAL CONDITIONS

Aera is not proposing to any changes to the general conditions.

MONTEREY BAY AIR RESOURCES DISTRICT
TITLE V OPERATING PERMIT ~~TV-0000007D~~ TV-0000007E

24580 Silver Cloud Court
Monterey, CA 93940
Telephone: (831) 647-9411

ISSUED TO:

Aera Energy LLC
P.O. Box 11164
Bakersfield, CA 93389-1164

PLANT SITE LOCATION:

66893 Sargent Canyon Road
San Ardo, CA 93450

ISSUED BY:

Richard Stedman, Air Pollution Control Officer

June 24, 2019 TBD
Effective Date

Nature of Business: Crude Oil Production

SIC Codes: 1311 - Crude Petroleum and Natural Gas

RESPONSIBLE OFFICIAL:

Name: Mr. T.C. Witt
Title: Vice President Operations
Phone: (661) 665-3141

ALTERNATIVE RESPONSIBLE OFFICIALS:

Name: Mr. J. M. Ohman
Title: Manager of Operations

Name: Mr. J. E. Morones
Title: Process Supervisor

FACILITY CONTACT PERSON:

Name: ~~Mr. D.J. Ramsey~~ Ms. C.A. Long
Title: ~~Compliance Assurance Specialist~~ Environmental Specialist
Phone: ~~(559) 295-1239~~ (831) 385-7704

TABLE OF CONTENTS

FACILITY DESCRIPTION.....33

EQUIPMENT DESCRIPTION 3

PERMIT SHIELD 4

FEDERALLY ENFORCEABLE EMISSION LIMITS AND STANDARDS 5

TESTING REQUIREMENTS AND PROCEDURES 12

MONITORING AND RECORD KEEPING REQUIREMENTS..... 15

REPORTING REQUIREMENTS..... 20

GENERAL CONDITIONS 22

FACILITY DESCRIPTION

Aera Energy LLC operates a crude oil production facility in the San Ardo Field in Southern Monterey County. Aera's operation includes both primary and tertiary crude oil production wells.

These production wells are supported by several categories of equipment necessary to recover heavy crude oil from the production zones. These categories include: 1) steam generators; 2) a cogeneration plant; 3) produced crude oil storage tanks; 4) oil and water separation equipment including heater treaters, free water knockout vessels, induced gas flotation units, skim tanks, produced water tanks, and sand basins; 5) well head casing vent vapor collection system including SulFerox Desulfurization Unit; 6) emergency flare; and 7) gasoline dispensing; ~~and 8) crude oil drilling/workover rigs.~~

Aera's facility is considered a federal Major Source and subject to the Title V permitting program due to the potential to emit oxides of nitrogen (NO_x) and sulfur dioxide (SO₂).

EQUIPMENT DESCRIPTION

OIL PRODUCTION FACILITY CONSISTING OF:

1. Oil Recovery And Steam Injection Wells.

~~2. Drilling Rigs With Diesel Fired Internal Combustion Engines.~~

~~3.2.~~ 3.2. Cogeneration Facilities, Two Units (Cogen A & B) Each Consisting Of:

- a) Solar Centaur T-4501 Gas Turbine, Fired On Natural Gas, Rated At 61.5 MMBtu/Hr Maximum Heat Input And 3.2 MW Electrical Output, Evaporative Cooler On Turbine Inlet, Water Injection For NO_x Control (0.5 Lbm H₂O/Lbm Fuel).
- b) Heat Recovery Steam Generator With Duct Burner Fired On Natural Gas, 38.7 MMBtu/Hr Maximum Heat Input, Steam Output Rating: 57,180 Lbs/Hr @ 1054 psia and 551°F.
- c) NO_x Abatement System, Zeolite Catalyst And Ammonia Injection System.

~~4.3.~~ 4.3. One Steam Generator (Identification Number 30-13), Fired On Natural Gas, 62.5 MMBtu/Hr Maximum Heat Input.

~~5.4.~~ 5.4. Nine Steam Generators (Identification Numbers 12-2 Through 12-5, 12-7 Through 12-10, And 30-1), Fired On Natural Gas, 85 MMBtu/Hr Maximum Heat Input. With Flue Gas Recirculation.

~~6.5.~~ 6.5. Two Steam Generators With Packed Tower Scrubber System (Identification Numbers 30-6 And 30-10A),

Fired On Natural Gas And/Or Produced Gas, 62.5 MMBtu/Hr Maximum Heat Input.

~~7.6.~~ One Steam Generator With Three Tray Scrubber System (Identification Number 30-9), Fired On Natural Gas And/Or Produced Gas, 62.5 MMBtu/Hr Maximum Heat Input.

~~8.7.~~ Casing Gas Processing Plant With A Design Capacity Of 10.0 MM Scf/Day.

~~9.8.~~ Crude Oil Heater Treater (Identification Numbers CTB-1), Fired On Natural Gas, Equipped With Two Burners, Each Burner Has A Maximum Heat Input Rating Of 4.2 MMBtu/Hr.

~~10.9.~~ Three Crude Oil Heater Treaters (Identification Numbers CTB-2, CTB-3 And CTB-4), Fired On Natural Gas, Each Unit Equipped With Two Burners, Each Burner Has A Maximum Heat Input Rating Of 2.4 MMBtu/Hr.

~~11.10.~~ Three Crude Oil Heater Treaters (Identification Numbers CTB-5, CTB-7 And CTB-8), Fired On Natural Gas, Each Unit Equipped With Two Burners, Each Burner Has A Maximum Heat Input Rating Of 6.3 MMBtu/Hr.

~~12.11.~~ Recovery Gas Treatment Plant Including Sulfatreat Vessels And Enclosed Ground Flare.

~~13.12.~~ Oil Treating Facility Including Truck Loadout.

~~14.13.~~ Waste Water Facility Including Water Reclamation Plant.

~~15.14.~~ Ancillary Equipment:

Gasoline Dispensing Facility.

Laboratory Fume Hood.

PERMIT SHIELD

Compliance with the conditions contained on this Title V Permit shall be deemed compliance with the following applicable requirements as of the date of issuance of this permit based upon the criteria following each applicable requirement:

40 CFR Part 60, Subpart A - New Source Performance Standards, General Provisions

This facility is subject to the requirements of this part because they are subject to 40 CFR Part 60, Subparts Dc and Gg. In their Title V application, the source has requested that the requirements of Subpart A be subsumed under the NSR permit requirements.

The District agrees, and asserts that compliance with the conditions on the Title V permit shall be considered

compliance with the monitoring, record keeping, and reporting requirements contained in 40 CFR Parts 60.7, 60.8 (with the exception of 60.8(b)), 60.11(with the exception of 60.11(b) and 60.11(e)), and 60.13 (with the exception of 60.13(a), 60.13(d)(2), 60.13 (g), and 60.13(i)).

40 CFR Part 60, Subpart Dc - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

All equipment with the exception of the Cogeneration facilities, the Natural Gas Fired Steam Generators, and the Steam Generators with Scrubber Systems predate this requirement. Although the equipment listed above is subject to the requirements of this part based upon the definition of a "steam generating unit", no requirements (SO_x or PM emission limits) are imposed due to the fact that no heat input is provided by coal, oil, or wood.

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

The cogeneration facilities at this facility are subject to the requirements of this NSPS. In addition to the post combustion control of SCR, the turbine utilizes water injection to control NO_x formation.

The NO_x emission factor from Section 60.332(a)(2) would be 150 ppmvd. This 150 ppmvd limit far exceeds the NSR permit limit of 3.8 lbs NO_x/hr which equates to 17.6 ppmv [(3.8 lbs NO_x/Hr) (1E06) (379 ft³/lbmole) (lbmole/46 lb NO) (hr/60 min) (min/29,700 ft³) = 17.6 ppmv] established by District Rule 207. Therefore, the NO_x limit from the NSPS will be subsumed under the NSR permit requirements that will be included on the Title V permit.

The SO₂ limit from Section 60.333 would be 150 ppmv. Compliance with this limit is assumed due to these units being fired exclusively on natural gas and based upon the SO₂ limit contained in the NSR permits of 0.1 lb/hr per unit. The SO₂ concentration at this permitted emission level would be 0.33 ppmv [(0.1 lbs SO₂/Hr) (1E06) (379 ft³/lbmole) (lbmole/64.1 lb SO₂) (hr/60 min) (min/29,700 ft³) = 0.33 ppmv]. This value is well below the 150 ppmv SO₂ allowed for in the NSPS. Therefore, the SO₂ emission standard from this NSPS will be subsumed under the NSR permit requirement that will be included on the Title V permit.

The testing and monitoring requirements contained in Sections 60.334 and 60.335 will be subsumed under the testing and monitoring requirements established under the NSR permits that will be included on the Title V permit. This will include the annual emissions testing requirement.

FEDERALLY ENFORCEABLE EMISSION LIMITS AND STANDARDS

- The pollutant mass emission rates in the exhaust discharged to the atmosphere from the heat recovery steam generator of Cogeneration Units A and B shall not exceed the following limits [District Rule 207; District Rule 403 limit of 38.2 lbs PM₁₀/hr; District Rule 404 NO_x limit of 140 lbs/hr, and SO₂ limit of 2000 ppmv; 40 CFR Part 60, Subpart GG NO_x limit of 150 ppm and SO₂ limit of 150 ppm]:

<u>Pollutant</u>	<u>Lbs/Hour</u>	<u>Lbs/Day</u>
Oxides of Nitrogen (NO _x)	3.8	90.7
Carbon Monoxide (CO)	7.0	168.8
Ammonia (NH ₃)	1.4	33.5
Particulate Matter <10 microns (PM ₁₀)	0.81	19.3
Volatile Organic Compounds (VOC)	1.0	24.1
Sulfur Dioxide (SO ₂)	0.1	1.0

These limits shall not apply during startup, which is not to exceed two hours in length, or shut down, which is not to exceed one hour in length. SCR catalytic controls, water injection and good operating practices shall be used to the fullest extent during startup to minimize pollutant emissions.

2. The NO_x emission from the cogeneration units shall be controlled at all times by water injection and operation of the selective catalytic reduction (SCR) system except during startup and shutdown. To ensure proper operation the water injection and SCR control systems, the facility must maintain operate the systems with the following parameters: [40 CFR 60, Subpart GG]

Parameter	Minimum Value:	Maximum Value:	Reporting
Water/Fuel Ratio	0.5 lb H ₂ O/lb Fuel	0.9 lb H ₂ O/lb Fuel	Average hourly
Catalyst Temperature	450°F	900°F	Average hourly
NH ₃ Injection Rate	900 Liter/Hour	1,800 Liter/Hour	Average hourly

These limits shall not apply during startup, which is not to exceed two hours in length, or shut down, which is not to exceed one hour in length. SCR catalytic controls, water injection and good operating practices shall be used to the fullest extent during startup to minimize pollutant emissions.

3. The pollutant mass emission rates in the exhaust discharged to the atmosphere from Steam Generator 30-13 shall not exceed the following limits [District Rule 207; District Rule 403 limit of 0.82 lbs PM₁₀/hr; District Rule 404 NO_x limit of 140 lbs/hr and SO₂ limit of 2000 ppmv]:

<u>Pollutant</u>	<u>Lbs/Hour</u>	<u>Lbs/Day</u>
Oxides of Nitrogen (NO _x)	3.1	65.0
Carbon Monoxide (CO)	0.21	5.0
Particulate Matter <10 microns (PM ₁₀)	0.29	7.0
Volatile Organic Compounds (VOC)	0.04	1.0
Sulfur Dioxide (SO ₂)	0.03	0.8

4. The emissions of oxides of nitrogen, as NO₂, in the exhaust discharged to the atmosphere from Steam Generator 30-13 shall not exceed 40 ppmvd, calculated at 3 percent O₂, dry. [District Rule 207]

5. The pollutant mass emission rates in the exhaust discharged to the atmosphere from Steam Generators 12-2, 12-3, 12-4, 12-5, 12-7, 12-8, 12-9, 12-10 and 30-1 shall not exceed the following limits [District Rule 207; District Rule 403 limit of 0.82 lbs PM₁₀/hr; District Rule 404 NO_x limit of 140 lbs/hr and SO₂ limit of 2000 ppmv]:

<u>Pollutant</u>	<u>Lbs/Hour</u>	<u>Lbs/Day</u>
Oxides of Nitrogen (NO _x)	0.93	22.3
Carbon Monoxide (CO)	2.51	60.4
Particulate Matter <10 microns (PM ₁₀)	0.65	15.5
Volatile Organic Compounds (VOC)	0.08	1.9
Sulfur Dioxide (SO ₂)	0.18	4.4

6. The emissions of oxides of nitrogen, as NO₂, in the exhaust discharged to the atmosphere from Steam Generators 12-2, 12-3, 12-4, 12-5, 12-7, 12-8, 12-9, 12-10 and 30-1 shall not exceed 9 ppmvd, calculated at 3 percent O₂, dry. [District Rule 207]
7. The emissions of carbon monoxide in the exhaust discharged to the atmosphere from Steam Generators 12-2, 12-3, 12-4, 12-5, 12-7, 12-8, 12-9, 12-10 and 30-1 shall not exceed 40 ppmvd, calculated at 3 percent O₂, dry. [District Rule 207]
8. The combined pollutant mass emission rate for Steam Generators 30-6 and 30-10A shall not exceed the following limits [District Rule 207; District Rule 403 limit of 11.6 lbs PM₁₀/hr; District Rule 404 NO_x limit of 140 lbs/hr, and SO₂ limit of 2000 ppmv]:

<u>Pollutant</u>	<u>Lbs/Hour</u>	<u>Lbs/Day</u>
Sulfur Dioxide (SO ₂)	19.00	456.0
Oxides of Nitrogen (NO _x)	12.50	300.0
Carbon Monoxide (CO)	0.16	4.0
Particulate Matter <10 microns (PM ₁₀)	11.00	264.0
Volatile Organic Compounds (VOC)	9.05	217.2

9. The pollutant mass emission rate for Steam Generator 30-9 shall not exceed the following limits [District Rule 207; District Rule 403 limit of 11.6 lbs PM₁₀/hr; District Rule 404 NO_x limit of 140 lbs/hr, and SO₂ limit of 2000 ppmv]:

<u>Pollutant</u>	<u>Lbs/Hour</u>	<u>Lbs/Day</u>
Sulfur Dioxide (SO ₂)	6.33	152.0
Oxides of Nitrogen (NO _x)	6.25	150.0
Carbon Monoxide (CO)	0.08	2.0
Particulate Matter <10 microns (PM ₁₀)	0.50	12.0
Volatile Organic Compounds (VOC)	2.14	51.4

10. Total produced gas combusted in steam generators 30-6 and 30-10A shall not exceed 1.5 MMCFD for each unit, and shall not exceed 2.8 MMCFD for both units combined. [District Rule 207]

~~11.~~ Total produced gas combusted in steam generators 30-6, 30-9 and 30-10A shall not exceed 3.8 MMCFD for the three (3) units combined. [District Rule 207]

~~11,12.~~ The scrubber effluent water pH shall be maintained at 6.6 or higher. [District Rule 207]

~~12,13.~~ The minimum scrubber water flow rate for the scrubber serving Steam Generators 30-6 and 30-10A shall be 700 gallons per minute. [District Rule 207]

~~13,14.~~ The minimum scrubber water flow rate for Steam Generator 30-9 shall be 200 gallons per minute. [District Rule 207]

~~14.15.~~ The cogeneration facilities and Steam Generators 12-2, 12-3, 12-4, 12-5, 12-7, 12-8, 12-9, 12-10, 30-1 shall only be fired on natural gas. [District Rule 207]

~~15.16.~~ The heat input rate to the Recovery Gas Treatment Plant flare shall not exceed 24.0 MMBtu/Hr. [District Rule 207]

~~16.17.~~ Emissions from the Recovery Gas Treatment flare shall not exceed the following limits: [District Rule 207]

<u>Pollutant</u>	<u>Emission Level</u>
NO _x	0.133 lbs/MMBtu
CO	0.37 lbs/MMBtu
VOC	0.0648 lbs/MMBtu
SO ₂	0.2% by volume (2,000 ppmv)

~~17.18.~~ The Recovery Gas Treatment flare combustion temperature shall be maintained at a minimum of 1400° F within 30 minutes of start-up. [District Rule 207]

~~18.19.~~ The Recovery Gas Treatment Plant's Sulfatreat system shall have a minimum sulfur removal efficiency of 97%. [District Rule 207]

~~19.20.~~ Treated produced gas exiting the Sulfatreat system shall have an H₂S concentration that does not exceed 900 ppm. [District Rule 207]

~~20.21.~~ When the Recovery Gas Treatment Plant is operational, Steam Generators 30-6 and 30-10A and their associated scrubber shall not be operational. [District Rule 207]

~~21.22.~~ Each of the cogeneration facilities shall undergo no more than one cold startup per day. [District Rule 207]

~~22.23.~~ Aera Energy LLC shall maintain a turbine startup protocol for both hot and cold startup, which details the procedures that will be used to minimize the pollutant emissions, and shall amend this protocol based on operating experience. [District Rule 207]

~~23.24.~~ Operation of the cogeneration facilities and all steam generators must be conducted in compliance with all data and specifications submitted in the permit applications to the District. [District Rule 207]

~~24.25.~~ Pollution Control equipment must be properly maintained and kept in good operating condition. [District Rule 207]

- 25-26. Aera Energy LLC shall cause to be operated an ambient air monitoring station at a site approved by the District in Southern Monterey County, for PM₁₀, O₃, and standard meteorological parameters on a continuous basis, in accordance with EPA requirements contained in 40 CFR Part 58, and as deemed necessary in accordance with the Air Resources Board guidelines. The air monitoring station instrumentations shall be compatible with the District's daily data retrieval polling methods. [District Rule 207]
- 26-27. The operation of the air monitoring station shall continue for the life of the project or until the Air Pollution Control Officer determines that good cause exists to discontinue monitoring. Good cause includes adequate technical justification submitted by the permittee that successfully proves that the continuation of all or part of the monitoring requirement is no longer necessary. [District Rule 207]
- 27-28. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three (3) minutes in any one (1) hour which is as dark or darker than Ringelmann 1 or equivalent 20% opacity. [District Rule 400]
- 28-29. Particulate matter shall not exceed 0.15 grains per standard dry cubic foot in any exhaust stream. [District Rule 403]
- 29-30. Sulfur compounds calculated as sulfur dioxide (SO₂) shall not exceed 0.2 percent by volume in any exhaust stream. [District Rule 404]
- 30-31. Oxides of Nitrogen, calculated as nitrogen dioxide (NO₂), shall not exceed 140 lbs/hr in any exhaust stream. [District Rule 404]
- 31-32. The sulfur content on any fuel oil used at the facility shall not exceed 0.5 percent by weight. [District Rule 412]
- 32-33. The sulfur content on any gaseous fuel used at the facility shall not contain sulfur compounds, calculated as hydrogen sulfide at standard conditions, in excess of 50 grains per 100 cubic feet. [District Rule 412]
- This condition does not apply to produced gas which is combusted in the steam generators with scrubbers. [District Rule 413]
- 33-34. During maintenance periods, all produced gas must be vented either to the steam generators for incineration or to an alternate approved control system. [District Rule 413]
- 34-35. No more than 40 pounds per day of Volatile Organic Compounds shall be discharged from any permit unit using or applying any solvent. [District Rule 416 Adopted 1/17/01]
- 35-36. Aera Energy LLC shall operate the storage tank at the Gasoline Dispensing Facility with a permanent submerged fill pipe and a Phase I vapor recovery system which has been certified by the California Air

Resources Board. [District Rule 418]

~~36-37.~~ Aera Energy LLC shall limit emissions of volatile organic compounds by the use of architectural coatings which comply with the requirements of District Rule 426. [District Rule 426]

~~37-38.~~ Aera Energy LLC shall not operate any existing steam drive crude oil production well unless nonmethane hydrocarbon (volatile organic compound) emissions from the wellhead annulus valve are reduced by at least 98 percent by weight. [District Rule 427]

~~38-39.~~ Any new steam drive oil production well shall meet the requirements of condition number ~~37-38~~ within four months from the date that the well is defined as a steam drive well. [District Rule 427]

~~39-40.~~ Aera Energy LLC shall install and maintain all piping, valves, fittings, and equipment that are a part of the wellhead annulus valve and hydrocarbon control system for any steam drive crude oil well in a no-leak condition. A leak is defined as an emission of gaseous organic (volatile organic) compounds which causes an appropriate analyzer sampling one centimeter from a source to register as high or higher than it would register if sampling a gas composed of 15,000 ppm methane in air. [District Rule 427]

~~40-41.~~ Aera Energy LLC shall submit an Operator Management Plan to the Air Pollution Control Officer. This plan shall describe the procedures which AERA Energy LLC intends to follow to comply with the provisions of District Rule 427 and must include at least the following [District Rule 427]:

- a) detailed schedule of inspections, which provides for inspection of each affected component at least once per 12 month period, except that components with moving parts, including periodically manipulated valves, shall be inspected at least quarterly. The schedule shall indicate estimated inspection periods and frequency;
- b) identification of manipulated valves and components with moving parts, which will be inspected quarterly;
- c) repair procedures following leak detection;
- d) identification of critical process units which cannot be immediately shut down for repair of leaks;
- e) identification of any hazard(s) which might affect the safety of inspectors carrying out the provisions of District Rule 427; and
- f) identification of the resource commitment to the program to implement the Operator Management Plan.

Any modifications to an existing Operator Management Plan relating to changes in inspection or repair procedures must be submitted for, and receive, approval of the Air Pollution Control Officer before they are implemented.

41.42. Aera Energy LLC shall repair leaks on all piping, valves, fittings, and equipment that are a part of the wellhead annulus valve and hydrocarbon control system for any steam drive crude oil well within the following time frames [District Rule 427 Adopted 12/19/01]:

- a) Leaks exceeding 75,000 ppm shall be repaired to a leak-free condition within 15 working days, with monitoring via an appropriate analyzer to verify the leak-free condition as soon as practicable, but not later than 1 calendar month after the date on which the component is repaired.
- b) Leaks exceeding 15,000 ppm shall be repaired to a leak-free condition within 20 working days, with monitoring via an appropriate analyzer to verify the leak-free condition as soon as practicable, but not later than 1 calendar month after the date on which the component is repaired.

The Air Pollution Control Officer may grant a 10-day extension to the above repair time frames if the operator demonstrates an adequate necessity for the delay and that sufficient actions will be taken to correct the leak within this time period.

42.43. The provisions of condition number ~~41.42~~ do not apply to a leaking component which is an essential part of a critical process unit identified in the approved Operator Management Plan, in which case repair shall be accomplished during the next shutdown or process turnaround of the critical process unit, but in no case more than three months from the date of detection. [District Rule 427]

43.44. No more than 2 percent of the total number of steam drive crude oil production wells may contain an open ended line. [District Rule 427 Adopted 12/19/01]

44.45. Aera Energy LLC shall limit emissions of volatile organic compounds during solvent cleaning and degreasing operations pursuant to the requirements of District Rule 433. [District Rule 433]

45.46. Aera Energy LLC shall operate the dispenser at the Gasoline Dispensing Facility with a Phase II vapor recovery system which has been certified by the California Air Resources Board. [District Rule 1002]

46.47. Aera Energy LLC shall comply with the requirements of Sections 61.145 through 61.147 of the National Emission Standard for Asbestos for all demolition and renovation projects. [40 CFR Part 61, Subpart M]

47.48. Upon detection of an excursion as defined in condition number ~~74.75~~, AERA Energy LLC shall restore the emissions unit to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. [40 CFR Part 64]

48.49. Aera Energy LLC shall submit a Compliance Assurance Monitoring Quality Improvement Plan (QIP) to the District as specified in 40 CFR '64.8 if the accumulation of excursions monitored under condition number ~~74.75~~ exceed 5 percent of the pollutant-specific emissions unit's operating time for a reporting period. [40 CFR Part 64]

~~49.50.~~ Aera Energy LLC shall comply with the requirements of 40 CFR Part 68 - Risk Management Plans. Aera Energy LLC shall submit a Risk Management Plan (RMP) if the facility becomes subject to the requirements of Part 68. [40 CFR Part 68]

~~50.51.~~ Aera Energy LLC shall comply with the requirements of 40 CFR Part 82 - Protection of Stratospheric Ozone. [40 CFR Part 82]

TESTING REQUIREMENTS AND PROCEDURES

~~51.52.~~ An annual performance test of each cogeneration facility shall be conducted during October of each year. Aera Energy LLC shall conduct performance tests in accordance with EPA Method 20 or CARB Method 100 for NO_x and O₂, EPA Method 10 or CARB Method 100 for CO, EPA Method 18 or CARB Method 100 for hydrocarbons, the collection method specified in BAAQMD Method 1B and the analysis specified in EPA Method 350.3 for ammonia to verify compliance with condition number 1. Aera Energy LLC shall furnish the District written results of such performance tests within sixty (60) days of the test completion. A testing protocol shall be submitted to the District no later than 30 days prior to testing, and District notification at least 10 days prior to the actual date of testing shall be provided so that a District observer can be present. The compliance test shall include, but not be limited to, the determination of the following parameters [District Rule 207]:

- a) Oxides of Nitrogen, as NO₂: ppmv at 15% O₂, dry and lb/hr.
- b) Carbon Monoxide: ppmv at 15% O₂, dry and lb/hr.
- c) Ammonia: ppmv at 15% O₂, dry and lb/hr.
- d) Volatile Organic Compounds (VOC): ppmv and lb/hr.

and the following process parameters:

- e) Fuel(s) being fired, rate (SDCFM) and proportion of each.
- f) Electricity generated during the test.
- g) Ammonia injected in lb/hr, NH₃/Inlet NO_x mole ratio, and verification of ammonia slip calculation used in weekly calculation.
- h) Water injection rate and water to fuel ratio.

If the testing cannot be completed during the month of October and if Aera Energy LLC can establish that the cogeneration facility was not operating for a period of time that could have allowed the testing to be completed, the testing can be delayed, such that it is conducted within thirty days from the date on which the

turbine is restarted, and comply with the following notification requirements:

- A) Aera Energy LLC must notify the District that they will be unable to meet the October testing requirement as soon as it becomes known, but in no event later than October 30.
- B) Aera Energy LLC must provide the District with at least five days prior notification of the anticipated date the cogeneration facility will be restarted.
- C) Aera Energy LLC must provide the District with the time and date of cogeneration facility startup within 24 hours after the actual startup.

~~52,53.~~ An annual performance test of each steam generator operated on natural gas during the year shall be conducted on or prior to December 31 of each year. Aera Energy LLC shall conduct performance tests in accordance with EPA Method 7E or CARB Method 100 for NO_x, EPA Method 10 or CARB Method 100 for CO, EPA Method 3A or CARB Method 100 for O₂ to verify compliance with condition numbers 3 through 7. Aera Energy LLC shall furnish the District written results of such performance tests within sixty (60) days of the test completion. A testing protocol shall be submitted to the District no later than 30 days prior to testing, and District notification at least 10 days prior to the actual date of testing shall be provided so that a District observer can be present. The compliance test shall include, but not be limited to, the determination of the following parameters [District Rule 207]:

- a) Carbon Monoxide: ppmv at 3% O₂, dry and lb/hr.
- b) Oxides of Nitrogen, as NO₂: ppmv at 3% O₂, dry and lb/hr.

and the following process parameter:

- c) Fuel(s) being fired, rate (SDCFM) and proportion of each.

~~53,54.~~ Performance tests of each operational steam generator with scrubber, as described in Equipment Description 5 and 6, shall be conducted ~~quarterly on or prior to December 31 of each year. If the steam generators have not been and will not be operational during a given calendar year, no annual performance test is required.~~ Aera Energy LLC shall conduct performance tests in accordance with EPA Method 20 or CARB Method 100 for SO₂, NO_x and O₂, EPA Method 10 or CARB Method 100 for CO, and EPA Method 18 or CARB Method 100 for hydrocarbons to verify compliance with condition numbers 8 through 13. Aera Energy LLC shall furnish the District written results of such performance tests within sixty (60) days of the test completion. A testing protocol shall be submitted to the District no later than 30 days prior to testing, and District notification at least 10 days prior to the actual date of testing shall be provided so that a District observer can be present. The compliance test shall include, but not be limited to, the determination of the following parameters [District Rule 207]:

Aera Energy LLC shall conduct performance tests in accordance with EPA Method 6, EPA Method 6C, EPA Method 20 or CARB Method 100 for SO₂, EPA Method 7E, EPA Method 20 or CARB Method 100 for NO_x, EPA Method 20 or CARB Method 100 for O₂, EPA Method 10 or CARB Method 100 for CO, and EPA Method 18, EPA Method 25, EPA Method 25A or EPA Method 25B for nonmethane hydrocarbons to verify compliance with condition numbers 8 through 14.

A testing protocol shall be submitted to the District no later than 30 days prior to testing, and District notification at least 10 days prior to the actual date of testing shall be provided so that a District observer can be present. Aera Energy LLC shall furnish the District written results of such performance tests within sixty

(60) days of the test completion. The compliance test shall include, but not be limited to, the determination of the following parameters: [Basis: District Rule 207 and District Rule 404]

- a) Sulfur Dioxide: ppmv at 3% O₂, dry, lb_m/hr, and lb_m/MMCF.
- b) Oxides of Nitrogen, as NO₂: ppmv at 3% O₂, dry, lb_m/hr, and lb_m/MMCF.
- c) Carbon Monoxide: ppmv at 3% O₂, dry, lb_m/hr, and lb_m/MMCF.
- d) Total nonmethane hydrocarbons and volatile organic compounds (VOC): ppmv, lb_m/hr, and lb_m/MMCF.
- e) Total Particulate: gr/sdcf, lbm/hr, lbm/MMCF, and PM₁₀ fraction.

and the following process parameters:

~~e)f)~~ pH of the scrubber water feed and effluent, the scrubber water flow rate, and for Unit 30-9 only, the number of trays in the scrubber as tested.

~~f)g)~~ Fuel(s) being fired, rate (SDCFM) and proportion of each.

~~In the second and fourth calendar quarter each year, in addition to the tests specified above, testing shall be completed to determine the following exhaust parameters:~~

~~g) Total Particulate: gr/sdcf, lb_m/hr, lb_m/MMCF, and PM₁₀ fraction.~~

~~The quarterly tests shall be conducted such that the exhaust parameters, as specified within this condition, are determined for steam generators 30-6 and 30-10A at least once per calendar year.~~

54.55. Testing shall be completed upstream and downstream of the Sulfatreat Vessels on an annual basis to determine the sulfur content and the higher heating value of the treated gas to verify compliance with condition number ~~18, 19~~. Aera Energy LLC shall conduct testing using a grab sample analysis by GC-FPD/TCD performed in the laboratory and in accordance with EPA Method 19. [District Rules 207 & 218]

55.56. No testing is specified for the generic (Rule 400) opacity requirement from condition number ~~27, 28~~ while firing on natural or produced gas. When firing on fuel oil continuously for a period of 120 hours and at intervals of seven (7) days during continuing operation on fuel oil, Aera Energy LLC shall conduct testing in accordance with the methodology contained in EPA Method 9 and the averaging/aggregating period contained in District Rule 400 to verify compliance with condition number ~~27, 28~~. [District Rule 218]

56.57. No testing is specified for the (Rule 403) particulate matter emission standard from condition number ~~28, 29~~. The fuel burning equipment is assumed to be in compliance with the particulate matter emission standard based upon the engineering calculations contained in the evaluation report. If testing is conducted for condition number ~~28, 29~~, Aera Energy LLC should conduct testing in accordance with the methodology contained in EPA Method 5. [District Rule 218]

57.58. No testing is specified for the (Rule 404) sulfur concentration limit in condition number ~~29, 30~~. The fuel

burning equipment is assumed to be in compliance with this sulfur concentration limit based upon the engineering calculations contained in the evaluation report. If testing is conducted for condition number ~~29~~ 30, Aera Energy LLC should conduct testing in accordance with the methodology contained in EPA Method 6 or CARB Method 100. [District Rule 218]

~~58-59.~~ No testing is specified for the (Rule 404) NO_x (oxides of nitrogen) limit in condition numbers ~~30~~ 31. The fuel burning equipment is assumed to be in compliance with these NO_x limits based upon the engineering calculations contained in the evaluation report. If testing is conducted for conditions number ~~30~~ 31, Aera Energy LLC should conduct testing in accordance with the methodology contained in EPA Method 7 or CARB Method 100. [District Rule 218]

~~59-60.~~ Testing of all fuel oil delivered to the facility shall be conducted prior to or upon receipt of the fuel oil, or in lieu of testing a manufacturers certification of the sulfur content of the fuel oil shall be supplied at the time of delivery. Aera Energy LLC shall conduct testing in accordance with ASTM D1552-83, ASTM D1266-87 or ASTM D2622-87 or shall receive certification as to the sulfur content of the fuel oil from the manufacturer to verify compliance with condition number ~~31~~ 32. Aera Energy LLC shall furnish the District the certification or written results of the test prior to firing the fuel oil, but in no case later than thirty (30) days of completion. [District Rule 218]

~~60-61.~~ An annual performance test of each steam generator firing produced gas shall be conducted on or prior to December 31 of each year. Aera Energy LLC shall conduct performance tests in accordance with EPA Methods 2, 2A, 2C, or 2D for measuring flow rates and EPA Methods 18, 25, 25A, or 25B for measuring the total gaseous organic concentrations at the inlet and outlet of the control device to verify compliance with condition number ~~37~~ 38. Aera Energy LLC shall furnish the District written results of such performance tests within sixty (60) days of the test completion. A testing protocol shall be submitted to the District no later than 30 days prior to testing, and District notification at least 10 days prior to the actual date of testing shall be provided so that a District observer can be present. [District Rule 218, District Rule 427]

~~61-62.~~ Annual leak testing shall be conducted according to the schedule contained in the Operator Management Plan required in condition number ~~40~~ 41. Aera Energy LLC shall conduct testing in accordance with EPA Method 21 for Determination of Volatile Organic Compound Leaks to verify compliance with condition numbers ~~39~~ 40 and ~~41~~ 42. [District Rule 427]

MONITORING AND RECORD KEEPING REQUIREMENTS

~~62-63.~~ The mole ratio of injected ammonia to the SCR inlet NO_x shall be recorded and the ammonia slip shall be calculated by a District approved method and recorded no less than once per seven (7) working days when the cogeneration facility is operating. If the cogeneration facility operates four (4) consecutive days but less than seven (7) the recording shall be made at least one time unless unscheduled maintenance prevents taking the reading and the District is notified within 5 days. The ammonia slip data used to determine slip shall be maintained in a log and kept on site. [District Rule 207]

~~63-64.~~ A continuous monitoring system must be operated to monitor and record the fuel consumption and the mass ratio of water to fuel being fired in the cogeneration facilities' turbines on an average hourly basis. This data

shall be maintained in a log and kept on site to calculate the mass ratio of water to fuel consumption on an average hourly basis as required by the District. This system must be accurate to within ± 5 percent. [District Rule 207; 40 CFR Part 60, Subpart GG]

~~64-65.~~ Instrumentation must be operated to measure the SCR catalyst inlet temperature and pressure differential across the SCR catalyst and to record the SCR catalyst inlet temperature on an average hourly basis. [District Rule 207 and 40 CFR 60, Subpart GG]

~~65-66.~~ A continuous monitoring system must be operated to monitor and record the NH₃ injection rate on an average hourly basis. [40 CFR 60, Subpart GG]

~~66-67.~~ Aera Energy LLC shall monitor and record all startup, shutdown, and operational profiles of the cogeneration facilities in a log maintained on site. [District Rule 207]

~~67-68.~~ Instrumentation shall continuously record the combustion temperature during flare operation. [District Rule 207]

~~68-69.~~ Aera must monitor and repair all fugitive emissions components at well sites, as defined in Section §60.5430a, which are subject to the fugitive emissions requirements of Section §60.5397a. Fugitive emissions are defined as: any visible emission from a fugitive emissions component observed using optical gas imaging (OGI) or an instrument reading 500 ppm or greater using Method 21. Aera must meet the following requirements [40 CFR 60, Subpart OOOOa]:

- a) Aera must develop a fugitives monitoring plan that incorporates the required elements of Section §60.5397a(a) and (c).
- b) Aera must conduct an initial monitoring survey within 60 days of the startup of production for each collection of fugitive emissions components at a new well site or by June 3, 2017 whichever is later. For modified or reconstructed well sites, the initial monitoring survey must be conducted within 60 days of first day of production or by June 3, 2017 whichever is later.
- c) A monitoring survey of each collection of fugitive emissions components at a well site within a company-defined area must be conducted at least semiannually after the initial survey. Consecutive semiannual monitoring surveys must be conducted at least four (4) months apart.
 - i) Fugitive emissions components that cannot be monitored without elevating the monitoring personnel more than two (2) meters above the surface may be designated as difficult-to-monitor. Difficult-to-monitor fugitive emissions components must be monitored at least once per calendar year. The written fugitive emissions monitoring plan required by this condition must: identify these components, identify the location of each of these components and must include an explanation of why each designated component is difficult to monitor.
 - ii) Fugitive emissions components that cannot be monitored because monitoring personnel would be exposed to immediate danger while conducting a monitoring survey may be designated as unsafe-to-monitor. The written fugitive emissions monitoring plan required by this condition must: identify these components, identify the location of each of these components, must include an

explanation of why each designated component is unsafe to monitor and must include a schedule for monitoring the fugitive emissions at these sites.

- d) Each monitoring survey shall observe each fugitive emissions component, as defined in Section §60.5430a, for fugitive emissions.
- e) Aera must repair or replace each identified source of fugitive emissions as soon as practicable, but no later than 30 calendar days after detection of fugitive emissions. If the repair or replacement is technically infeasible, would require a vent blowdown, a well shutdown or well shut-in, or would be unsafe to repair during operation of the unit, the repair or replacement must be completed during the next well shutdown, well shut-in, after an unscheduled, planned or emergency vent blowdown or within two (2) years, whichever is earlier. Each repaired or replaced fugitive emissions component must be resurveyed as soon as practicable, but no later than 30 calendar days after being repaired, to ensure that there are no fugitive emissions.
 - i) For each repair that cannot be made during the monitoring survey when the fugitive emissions are initially found, the operator may resurvey the repaired the components using either Method 21 or optical gas imaging within 30 calendar days of finding such fugitive emissions. Additionally, a digital photograph must be taken of that component or the component must be tagged for identification purposes. The digital photograph must include the date that the photograph was taken, must clearly identify the component by location within the site (e.g., the latitude and longitude of the component or by other descriptive landmarks visible in the picture).
 - ii) Operators that use Method 21 to resurvey the repaired fugitive emissions components must follow the written fugitive emissions monitoring plan required by this condition. A fugitive emissions component is repaired when the use of Method 21 instrument indicates a concentration of less than 500 ppm above background or when no soap bubbles are observed when the alternative screening procedures specified in section 8.3.3 of Method 21 are used.
 - iii) Operators that use the optical gas imaging to resurvey the repaired fugitive emissions components must follow the written fugitive emissions monitoring plan required by this condition. A fugitive emissions component is repaired when the use of the optical gas imaging instrument shows no indication of visible emissions.

~~69-70.~~ Aera Energy LLC shall maintain records for each maintenance period which include time and date started and completed, as well as the amount of produced gas processed during the period. [District Rule 207]

~~70-71.~~ Aera Energy LLC shall maintain daily records to document compliance with condition number ~~34~~ 35. [District Rule 416 Adopted 4/20/94]

~~74-72.~~ Aera Energy LLC shall maintain records showing the quantity of all gasoline delivered to the gasoline dispensing facility. [District Rule 418]

~~72-73.~~ Aera Energy LLC shall maintain a log covering at least the preceding 12-month period of all inspections performed to verify compliance with condition numbers ~~39 40~~ and ~~41 42~~. The log shall include inspection dates, components found leaking and emission levels (in ppm) and repair and verification dates. [District Rule 427]

73-74. Aera Energy LLC shall maintain a monthly log of the facility-wide total volume of make-up solvent used, and waste solvent disposed of or recycled, for all cleaning devices using volatile organic compounds for solvent cleaning and degreasing. [District Rule 433]

The record keeping provisions of this condition do not apply to remote reservoir cold cleaners which are serviced by an independent contractor. For such remote cold cleaners, evidence of service shall be maintained.

74-75. Aera Energy LLC shall maintain the following Compliance Assurance Monitoring (CAM) as specified below [40 CFR Part 64]:

- a) The pH of the scrubber water and the water recycle rate for the Scrubber serving Steam Generators 30-6 and 30-10A shall be monitored and recorded at least once per day on any day that the Scrubber is operating. Excursions from the monitoring parameters are defined as a pH of less than 6.6 and/or a water recycle rate of less than 700 gpm. A pH meter and a flow measuring device will be utilized for the monitoring.
- b) The recovery gas flow rate and the scrubber water inlet flow rate for the Scrubber serving Steam Generator 30-9 shall be monitored and recorded at least once per day on any day that the Scrubber is operating. A minimum ratio of these parameters will be established to assure that the effluent pH is at least 4.6. A performance test shall be conducted to verify compliance and to define excursions from the monitoring parameters and the monitoring methodology and shall be submitted to the District within 45 days of start-up of this equipment.

Within 30 days of completion of the performance testing, Aera Energy shall submit to the District an application for modification of the CAM parameters and methodology associated with the Scrubber serving Steam Generator 30-9.

- c) The control of produced gas shall be monitored and recorded at least once per day. An excursion shall be defined as any period of time that the recovery gas exceeds 30 psi at Gas Plant #2 after the inlet pressure regulators, when the SO₂ scrubber is operating. A pressure gauge will be used for the monitoring.

75-76. As applicable Aera Energy LLC shall maintain the following general records of required monitoring information [District Rule 218]:

- a) the date and time of sampling or measurements;
- b) the date(s) analyses were performed;
- c) the company or entity that performed the analyses;
- d) the analytical techniques or methods used;
- e) the results of such analyses;
- f) the operating conditions existing at the time of sampling or measurement; and
- g) the records of quality assurance for continuous monitoring systems (including, but not limited to quality control activities, audits, and calibration drift checks) and source testing methods.

76-77. Aera Energy LLC shall maintain records on the occurrence and duration of any startup, shutdown, or

malfunction in the operation of the pollution control equipment under this permit. [District Rule 218]

~~77-78.~~ Aera Energy LLC shall retain records of all required monitoring data and support information as required by condition numbers ~~51~~ 52 through ~~76~~ 77 for a period of at least five (5) years from the date of the monitoring, sample collection, measurement, report, and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit pursuant to condition numbers ~~79~~ 80 through ~~84~~ 85. [District Rule 218]

~~78-79.~~ Aera shall maintain the following records for each collection of fugitive emissions components at a well [40 CFR 60, Subpart OOOOa]:

- a) The fugitive emissions monitoring plan, as required in Condition ~~68~~ 69.
- b) The records of each monitoring survey including the following:
 - A. Date of survey.
 - B. Beginning and end time of the survey.
 - C. Name of operator(s) performing survey. You must note the training and experience of the operator.
 - D. Monitoring instrument used.
 - E. When optical gas imaging is used to perform the survey, one or more digital photographs or videos, captured from the optical gas imaging instrument used for conduct of monitoring, of each required monitoring survey being performed. The digital photograph must include the date the photograph was taken and the latitude and longitude of the collection of fugitive emissions components at a well site imbedded within or stored with the digital file. As an alternative to imbedded latitude and longitude within the digital file, the digital photograph or video may consist of an image of the monitoring survey being performed with a separately operating GPS device within the same digital picture or video, provided the latitude and longitude output of the GPS unit can be clearly read in the digital image.
 - F. Fugitive emissions component identification when Method 21 is used to perform the monitoring survey.
 - G. Ambient temperature, sky conditions, and maximum wind speed at the time of the survey.
 - H. Any deviations from the monitoring plan or a statement that there were no deviations from the monitoring plan.
 - I. Documentation of each fugitive emission, including the information listed below:
 - i. Location.
 - ii. Any deviations from the monitoring plan or a statement that there were no deviations from the monitoring plan.
 - iii. Number and type of components for which fugitive emissions were detected.
 - iv. Number and type of difficult-to-monitor and unsafe-to-monitor fugitive emission components monitored.
 - v. Instrument reading of each fugitive emissions component that requires repair when Method 21 is used for monitoring.
 - vi. Number and type of fugitive emissions components that were not repaired as required in Condition ~~68(e)~~ 69(e).

- vii. Number and type of components that were tagged as a result of not being repaired during the monitoring survey when the fugitive emissions were initially found as required in Condition ~~68(e)~~ 69(e).
- viii. If a fugitive emissions component is not tagged, a digital photograph or video of each fugitive emissions component that could not be repaired during the monitoring survey when the fugitive emissions were initially found as required in Condition ~~68(e)~~ 69(e). The digital photograph or video must clearly identify the location of the component that must be repaired. Any digital photograph or video required under this paragraph can also be used to meet the requirements of this condition under (b)(E), as long as the photograph or video is taken with the optical gas imaging instrument, includes the date and the latitude and longitude are either imbedded or visible in the picture.
- ix. Repair methods applied in each attempt to repair the fugitive emissions components.
- x. Number and type of fugitive emission components placed on delay of repair and explanation for each delay of repair.
- xi. The date of successful repair of the fugitive emissions component.
- xii. Instrumentation used to resurvey a repaired fugitive emissions component that could not be repaired during the initial fugitive emissions finding.

REPORTING REQUIREMENTS

79-80. Aera Energy LLC shall submit to the Air Pollution District by February 15, an annual report containing the annual fuel usage of all equipment under this permit; and the annual natural gas fuel consumption, annual electricity generated, and annual emissions of NO_x, CO, VOC, and ammonia from the cogeneration facility for the preceding calendar year. [District Rule 207]

80-81. Aera Energy LLC shall report all breakdowns which result in the inability to comply with any emission standard or requirement contained on this permit to the Air Pollution Control Officer (APCO) within 1 hour of the occurrence; this one hour period may be extended up to six hours for good cause by the APCO. The APCO may elect to take no enforcement action if Aera Energy LLC demonstrates to the APCO's satisfaction that a breakdown condition exists.

The estimated time for repair of the breakdown shall be supplied to the APCO within 24 hours of the occurrence and a written report shall be supplied to the APCO within 5 days after the occurrence has been corrected. This report shall include at a minimum [District Rule 214]:

- a) a statement that the condition or failure has been corrected and the date of correction; and
- b) a description of the reasons for the occurrence; and
- c) a description of the corrective measures undertaken and/or to be undertaken to avoid such an occurrence in the future; and

- d) an estimate of the emissions caused by the condition or failure.

81:82. Aera Energy LLC shall submit an annual report to the District by May 1 of each year which includes a tabulation of the record keeping required under condition number ~~72~~ 73 and a schedule of repair for leaking components, and a currently updated version of the Operator Management Plan as required by District Rule 427 and condition number ~~40~~ 41. [District Rule 427]

82:83. Aera Energy LLC shall submit quarterly reports to the District of all wells connected to a vapor recovery system. [District Rule 427]

83:84. Aera Energy LLC shall submit quarterly reports to the District, in a District approved format, within 45 days from the end of the quarter and these shall include [District Rules 213 & 218]:

- a) the time intervals, date and magnitude of excess emissions, nature and cause of the excess (if known), corrective actions and preventative measures adopted; and
- b) the averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard for the pollutant in question; and
- c) all information pertaining to any monitoring as required by the permit; and
- d) a negative declaration specifying when no excess emissions occurred.

84:85. Aera Energy LLC shall submit an annual compliance certification report to the District and U.S. EPA, in a District approved format, no later than February 15 for the period of January 1 through December 31 of the preceding year. [District Rule 218]

This report shall include a written statement from the responsible official which certifies the truth, accuracy, and completeness of the report and shall include at a minimum:

- a) identification of each term or condition of the permit that is the basis of the certification; and
- b) the compliance status; and
- c) whether compliance was continuous or intermittent; and
- d) the method(s) used for determining the compliance status of the source, currently and over the reporting period.

85:86. For the collection of fugitive emissions components at each well site, Aera must submit to the District an annual report which includes the records of each monitoring survey conducted the preceding year, as required in Condition ~~68~~ 69, no later than October 31. The annual report must include the information specified below. Submittal of an annual report to the US Environmental Protection Agency following 40 CFR 60.5420a satisfies the reporting requirements listed below [40 CFR 60, Subpart OOOOa]:

- a) The date of the survey.
- b) Beginning and end time of the survey.
- c) Name of operator(s) performing survey. If the survey is performed by optical gas imaging, you must note the training and experience of the operator.
- d) Ambient temperature, sky conditions, and maximum wind speed at the time of the survey.
- e) Monitoring instrument used.
- f) Any deviations from the monitoring plan or a statement that there were no deviations from the monitoring plan.
- g) Number and type of components for which fugitive emissions were detected.
- h) Number and type of fugitive emissions components that were not repaired as required in Condition ~~68(e)~~ 69(e).
- i) Number and type of difficult-to-monitor and unsafe-to-monitor fugitive emission components monitored.
- j) The date of successful repair of the fugitive emissions component.
- k) Number and type of fugitive emission components placed on delay of repair and explanation for each delay of repair.
- l) Type of instrument used to resurvey a repaired fugitive emissions component that could not be repaired during the initial fugitive emissions finding.

GENERAL CONDITIONS

~~86:87.~~ Aera Energy LLC shall comply with all conditions of this federal operating permit. Any noncompliance with a permit condition constitutes a violation of the Federal Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. [District Rule 218]

~~87:88.~~ In an enforcement action, the fact that Aera Energy LLC would have to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit is not a defense. [District Rule 218]

~~88:89.~~ This permit may be modified, revoked, reopened and reissued, or terminated for cause as determined by the District. The filing of a request by Aera Energy LLC for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. [District Rule 218]

~~89:90.~~ This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. [District Rule 218]

~~90:91.~~ Aera Energy LLC shall furnish to the District, within a reasonable time, any information that the District may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating

the permit, or to determine compliance with the permit. Upon request, Aera Energy LLC shall also furnish to the District copies of records required to be retained by this permit. [District Rule 218]

91-92. For applicable requirements that will become effective during the permit term, Aera Energy LLC shall meet such requirements on a timely basis unless a more detailed schedule is expressly required by the applicable requirement. [District Rule 218]

92-93. Any document submitted to the District pursuant to this permit shall contain certification by the responsible official of truth, accuracy and completeness. All certifications shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Aera Energy LLC shall promptly, upon discovery, report to the District a material error or omission in these records, reports, plans, or other documents. [District Rule 218]

93-94. Aera Energy LLC shall report any violation of any requirement contained in this permit to the District within 96 hours after such occurrence. The violation report shall include the time intervals, date and magnitude of excess emissions; nature and cause of the excess (if known), corrective actions and preventive measures adopted. [District Rule 218]

94-95. Upon any administrative or judicial challenge, all the emission limits, specific and general conditions, monitoring, record keeping, and reporting requirements of this permit, except those being challenged, remain valid and must be complied with. [District Rule 218]

95-96. For this federal operating permit to remain valid through the permit term of five years from the date of issuance, Aera Energy LLC shall pay an annual emission fee based upon the requirements of District Rule 308. [District Rule 218]

96-97. Aera Energy LLC shall have available at the facility at all times a copy of this federal operating permit. [District Rule 218]

97-98. For protection from enforcement action based upon an emergency, as defined in District Rule 218, the responsible official for Aera Energy LLC shall submit to the District relevant evidence which demonstrates [District Rule 218]:

- a) an emergency occurred; and
- b) that Aera Energy LLC can identify the cause(s) of the emergency; and
- c) that the facility was being properly operated at the time of the emergency; and
- d) that all steps were taken to minimize the emissions resulting from the emergency; and
- e) within two working days of the emergency event, Aera Energy LLC provided the District with a description of the emergency and any mitigating or corrective actions taken.

98,99. Upon presentation of credentials, Aera Energy LLC shall allow the District, the ARB, the EPA, or an authorized representative, to perform the following [District Rule 218]:

- a) enter upon the premises where the federal operating permit source is located or in which any records are required to be kept under the terms and conditions of this federal operating permit;
- b) to have access to and copy any records required to be kept under the terms and conditions of this federal operating permit;
- c) to inspect any equipment, operation, or process described or required in this federal operating permit; and,
- d) to sample emissions from the source.

99,100. The renewal application for this permit shall be submitted at least 6 months but no greater than 18 months prior to permit expiration. [District Rule 218]
