

STATEMENT OF BASIS
Title V Permit Renewal

Facility Name: Escondido Energy Center LLC
Title V App. Number: APCD2022-APP-007283
Title V Permit Number: APCD2007-TVP-978478
Facility ID: APCD2000-SITE-03769
Equipment Address: 1968 Don Lee Place, Escondido, CA 92029
Facility Contact: Stephen Cobbe
Contact Phone: (619) 579-9002
Permit Engineer: Maria Galvez
Date: November 11, 2023

11/15/2023

X Nicholas Horres

Nicholas Horres
Senior Engineer
Signed by: NHorres

Senior Engineer:

1.0 Type of Action and Summary of Changes

The applicant requests issuance of a renewal Title V permit for Escondido Energy Center, LLC (Title V permit APCD2007-TVP-978478). The facility is subject to Title V permitting because it is subject to the Acid Rain program under Title IV of the federal Clean Air Act (CAA).

Since the last renewal Title V permit was issued, there have been no Title V applications submitted.

2.0 History of Title V Applications and Modifications/Applications since previous Renewal:

The renewal application was received on 5/20/22. The Title V permit expires on 06/17/2023. This renewal application was submitted at least 12 months but not more than 18 months prior to permit expiration, in accordance with Rule 1410. Therefore, the renewal application is timely.

The following table summarizes all previous applications at this facility affecting the Title V permit since the previous renewal.

Title V Application History Since Initial Title V Permit				
Application Number	Title V Permit Number	Application Description	Equipment	Approved
APCD2017-APP-005203	APCD2007-TVP-978478	Latest Title V Renewal	Turbine set	yes
APCD2022-APP-007283	APCD2007-TVP-978478	Current Title V Renewal	Turbine set	Current Renewal

Since the previous renewal, the District has received no permit applications from this facility. These would be applications submitted under the District’s local permitting program and typically are associated with a corresponding Title V application to implement the same change to the Title V permit once the modified local permit is issued (see appendix A of the permit).

3.0 Facility Description

The facility consists of a General Electric simple cycle natural gas turbine. The turbine is equipped with SCR, an oxidation catalyst, and a continuous emissions monitoring system (CEMS).

Permit Number	Equipment Description
APCD2014-PTO-002082	Gas Turbine Engine Generator: General Electric, Model LM-6000, 46.5 MW capacity, 468.8 MMBtu/hr heat input, natural gas fired, simple cycle, S/N 191-746, with an inlet air evaporative cooling system ("fogger"); water injection, a Technip selective catalytic reduction (SCR) system, including ammonia injection grid (AIG), AIG mixer plates and silencer perforated plates, with an automatic ammonia injection control system; an oxidation catalyst; CEMS for NOx, CO and O2; and a data acquisition and recording system.

4.0 Title V Applicability & Acid Rain

The Title V regulation applies to any stationary source that is a major stationary source as defined in Rule 1401(c)(26) or is subject to the acid rain provisions of Title IV of the federal Clean Air Act (CAA). Escondido Energy Center LLC is not a major source. The facility is subject to Acid Rain provisions, as discussed below.

The facility is subject to the acid rain provisions under District Rule 1412 and Title IV of the Federal CAA as given . Under the acid rain program, an “affected” source is subject to Title V permitting pursuant to District Rule 1401 and 40 CFR Subpart C, part 70.3(a)(4).

It should be noted that Escondido Energy is well below major source thresholds for all pollutants. The source is subject to Title V permitting solely because it is a requirement of the acid rain program.

5.0 Compliance History

There have been no compliance actions at this facility since the most recent Title V renewal.

6.0 Potential to Emit and Actual Emissions

The following table shows the actual and potential emissions for the facility that are used to establish the major source status for Title V. For all pollutants, emissions are below major source thresholds.

Title V Major Source Determination				
Tons per Year:				
Pollutant	Thresholds	Facility Actual Emissions	Facility Potential to Emit	Major Source
Highest Federal HAP	10	<10	0.048	No
Sum of Federal HAPs	25	<25	0.09	No
NOx	25	0.8194	12.0	No
VOC	25	0.1407	2.7	No
PM10	100	0.8365	4.4	No
SOx	100	0.03946	2.4	No
CO	100	0.4571	15.4	No

NOx, CO, VOC and PM10 potential emissions are based on permit condition limits.
SOx potential emissions are based on permit condition fuel limits.
HAPs potential emissions are based on heat input and annual operating hours.
The actual emissions are from the District's 2020 emission inventory report.

7.0 40 CFR Part 64 CAM (Compliance Assurance Monitoring)

Pursuant to New Source Review (NSR) the turbines are required to operate and maintain the CEMS to measure NOx and CO, which is also required by District Rules 69.3.1, and 40 CFR 60 Subpart KKKK. Monitoring and testing are required in the existing District permits. For the related Title V permit, additional recordkeeping and reporting are required pursuant to District Rule 1421. The emission unit has an uncontrolled PTE for NOx and CO in excess of the major source thresholds. For this reason, Compliance Assurance Monitoring (CAM) under 40 CFR Part 64 was considered for this review.

§ 64.2 (b)(vi) specifies that the requirements of Part 64 shall not apply to emission limitations or standards for which a part 70 or 71 permit specifies a continuous compliance determination method, as defined in § 64.1. Both the District and Federal operating permits require the turbines to be equipped with Continuous Emissions Monitoring Systems (CEMS), which meets the definition for a continuous compliance determination method, as it is used to determine compliance with an emission limitation or standard on a continuous basis and provides the data in units of the standard or is correlated directly with the compliance limit. Therefore, these units are exempt from the requirements of 40 CFR 64, pursuant to § 64.2 (b)(vi).

8.0 Applicable Requirements

This section summarizes the major types of requirements for this facility. These types of requirements include facility-wide, and permit specific applicable requirements. Additionally for each emission unit, the rule that results in the primary emission limitation is listed.

General Facility-wide Applicable Requirements

Regulation	Rule Citation	Title
SDCAPCD Reg. II	10(a) 10(b)	Permits Required – (a) Authority to Construct Permits Required – (b) Permit to Operate
SDCAPCD Reg. II	19	Provision of Sampling & Testing Facilities
SDCAPCD Reg. II	19.3	Emission Information
SDCAPCD Reg. II	20, 20.1, 20.2, 20.3	New Source Review
SDCAPCD Reg. II	21	Permit Conditions
SDCAPCD Reg. II	24	Temporary Permit to Operate
SDCAPCD Reg. II	25	Appeals
SDCAPCD Reg. IV	60	Circumvention
SDCAPCD Reg. IV	71	Abrasive Blasting
SDCAPCD Reg. V	98***	Breakdown Conditions: Emergency Variance
SDCAPCD Reg. VI	101	Burning Control
SDAPCD Reg. VIII	131	Stationary Source Curtailment Plan
40 CFR Part 68	Part 68	Risk Management Plan (Ammonia Storage)
40 CFR Part 82	Subpart B	Servicing of Motor Vehicle Air Conditioners
40 CFR Part 82	Subpart F	Recycling and Emissions Reducing
40 CFR Part 89	Part 89	VOC Standards for Consumer Products

Facility-wide Prohibitory & Other Requirements

Regulation	Rule Citation	Title
SDCAPCD Reg. II	19.2	Continuous Emission Monitoring Requirements
SDCAPCD Reg. IV	50	Visible Emissions
SDCAPCD Reg. IV	51	Nuisance
SDCAPCD Reg. IV	52	Particulate Matter
SDCAPCD Reg. IV	53	Specific Contaminants
SDCAPCD Reg. IV	62	Sulfur Content of Fuels
SDCAPCD Reg. IV	67.0.1	Architectural Coatings
SDCAPCD Reg. IV	67.17	Storage of Organic Materials Containing VOC
SDCAPCD Reg. XII	1200**	Toxic Air Contaminants – New Source Review
SDCAPCD Reg. XII	1206	Asbestos Removal, Renovation, and Demolition
40 CFR Part 60	Subpart A	NSPS General Provisions
40 CFR Part 63	Subpart A	NESHAP General Provisions
40 CFR Part 61	Subpart M	NESHAP - Asbestos
40 CFR Part 73	Part 73	Sulfur Dioxide Allowance System

40 CFR Part 74	Part 74	Acid Rain
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**This rule has been adopted by the District and will become federally enforceable once the rule has been noticed/approved by EPA.*

***Not federally enforceable*

****Breakdowns/variances are not recognized by EPA and cannot grant relief from federal enforcement of requirements*

Permit Specific Applicable Requirements:

SDAPCD Permit No.	Title V Permit No.	Permit Description	Applicable Rules
APCD2014-PTO-002082	APCD2007-TVP-978478	Gas Turbine Engine Generator	SDAPCD Reg. IV, Rules 50, 51, 52, 53, 62, 63, 69.3**, 69.3.1**, 40 CFR 60 Subpart KKKK

Emission Limitations

Combustion Turbines	
Pollutant	Primary Limiting Regulations*
NOx	20.2 (NSR); Rule 69.3**, Rule 69.3.1**; 40 CFR 60 Subpart KKKK
SO2	Rule 20.2; Rule 62; Rule 53; 40 CFR 60 Subpart KKKK
VOC	Rule 20.2
CO	Rule 20.2 (AQIA only)
PM10	Rule 20.2; Rule 53 (PM)
Toxic Pollutants	Rule 1200

*There are certain operating scenarios where a different rule may be the most stringent limitation.

**District Rule 69.3 has been repealed by SDAPCD and replaced with 69.3.1 which has been submitted to EPA for SIP inclusion. However, EPA has not approved 69.3.1 due to court challenges related to startup and shutdown provisions, which means that the SIP version of Rule 69.3 is still enforceable but may be replaced by 69.3.1 once approved. In the current form of these rules, there is no difference in requirements for this equipment.

Criteria pollutant ppm limits from NSR (BACT) do not apply during startups and shutdowns.

Emissions during startups and shutdowns are limited separately.

NOx ppm limits from 40 CFR 60 subpart KKKK apply at all times.

Other criteria pollutant limits from NSR limit emissions below major source or PSD thresholds.

NOx, CO, and VOC emissions are also limited hourly, daily, and annually for NSR.

9.0 Updates to the Title V Permit Incorporated into this Action

There are no changes being made to the emission unit specific permits.

10.0 Permit Streamlining

Permit conditions require the use of Public Utility Commission (PUC) quality natural gas. PUC quality natural gas guarantees compliance with District Rule 62, District Rule 53, and 40 CFR 60 Subpart KKKK for SOx emissions. The Standards for Gas Service in the State of California, prescribed by the Public Utilities Commission of the State of California in General Order 58A,

states that: (a) no gas supplied by any gas utility for domestic, commercial or industrial purposes in this state shall contain more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, and (b) no gas supplied by any gas utility for domestic, commercial, or industrial purposes shall contain more than five (5) grains of total sulfur per one hundred (100) standard cubic feet.

District Rule 62 requires that any gaseous fuel used contains no more than 10 grains of sulfur compounds, calculated as hydrogen sulfide, per 100 cubic feet of dry gaseous fuel (0.23 grams of sulfur compounds, calculated as hydrogen sulfide, per cubic meter of dry gaseous fuel), at standard conditions. The requirement for PUC natural gas is more stringent than this rule, so this requirement is met with the use of PUC quality natural gas.

District Rule 53 requires that sulfur compounds, calculated as sulfur dioxide, discharged into the atmosphere from any single source of emissions do not exceed 0.05%, by volume, on a dry basis. Maximum grain loading of 10 gr/100 dscf results in SO2 emissions at 0.002% by volume, so requirements of District Rule 53 are met through use of PUC quality natural gas. (see calculations below).

40 CFR 60 Subpart KKKK requires that gases discharged from stationary combustion turbines do not contain SO2 in excess of 0.90 pounds per megawatt-hour. Maximum grain loading of 10 gr/100 dscf results in SO2 emissions at 0.28 lbs/MW-hr, so requirements of NSPS KKKK are met through use of PUC quality natural gas. (see calculations below).

Heat Input:	4.69E+08	Btu/hr
Natural Gas Heating Value:	1020	Btu/cu.ft.
Natural Gas Density:	0.0416	lbs/cu.ft. (16 lbs CH4 per 385 cu.ft.)
Natural Gas F-Factor:	8710	cu.ft. (exhaust)/MMBtu @ 0% O2
Exhaust Gas Emission Factor:	198.025	dscf per pound fuel @ 12% CO2
Given Natural Gas Usage:	468,800	cu.ft./hr
Given Exhaust Gas Flow Rate:	583,226	acfm

Rule 53 SO2 limit: 0.05 % by volume

assume all sulfur in fuel is released as SO2

$$SO_2 = (10 \text{ grains S}/100 \text{ scft fuel}) \times (1 \text{ lb S}/7000 \text{ grain}) \times (64 \text{ lbs SO}_2/32 \text{ lb S}) \times (385 \text{ cft SO}_2/64 \text{ lb SO}_2) \times (1 \text{ scft fuel}/1020 \text{ Btu}) \times (10^6 \text{ Mmbtu}/1 \text{ Btu}) \times (1 \text{ MMBtu}/8710 \text{ dscft exhaust}) \times 100 = 0.001935 \%SO_2 \text{ by volume}$$

maximum sulfur content of 10 grains S/ 100 scft fuel shows compliance with Rule 53

40 CFR 60 KKKK limit: 0.9 lb/MW-hr

$$SO_2 = (10 \text{ grains S}/100 \text{ scft fuel}) \times (1 \text{ lb S}/7000 \text{ grain}) \times (64 \text{ lbs SO}_2/32 \text{ lb S}) \times (1 \text{ scft fuel}/1020 \text{ Btu}) \times (468,800,000 \text{ Btu/hr}) \times (1/46.5 \text{ MW}) = 0.282401 \text{ lb/MW-hr}$$

maximum sulfur content of 10 grains S/ 100 scft fuel shows compliance with NSPS KKKK

OR 40 CFR 60 KKKK limit: 0.06 lb/MMBtu

$$SO_2 = (10 \text{ grains S}/100 \text{ scft fuel}) \times (1 \text{ lb S}/7000 \text{ grain}) \times (64 \text{ lbs SO}_2/32 \text{ lb S}) \times (1 \text{ scft fuel}/1020 \text{ Btu}) \times (10^6 \text{ Mmbtu}/1 \text{ Btu}) = 0.028011 \text{ lb/MMBtu}$$

maximum sulfur content of 10 grains S/ 100 scft fuel shows compliance with NSPS KKKK

11.0 Permit Shields

No permit shield applies.

12.0 Permit Process-Public Notification and Notice to EPA and Affected States

Before issuing the final permit, The District will provide the opportunity for review by EPA and affected states and a public notice period. Notice will be provided to the EPA electronically through the EPS and will be sent electronically to affected states and tribes. The public notice and associated documents will be provided on our website and the public notice will be published in a newspaper. The District will incorporate any suggested changes made by

13.0 Recommendations

The facility is expected to comply with all applicable requirements including those cited in the current District permit as well as those under District Rule 1401 and 40 CFR Part 70. Therefore, the recommendation of this report is for the subject renewal Title V permit to be issued following public notice, EPA review, and response to any comments.

14.0 Attachments

The following are attached:

- Application Package
- Draft Permit
- Public Notice