

**STATEMENT OF BASIS
Title V Permit**

Facility Name: Pio Pico Energy Center
Title V App. Number: APCD2017-APP-005036
Title V Permit Number: APCD2024-TVP-00048
Facility ID: APCD2010-SITE-00471
Equipment Address: 7363 Calzada de la Fuente, San Diego, CA 92154
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Permit Engineer: Maria Galvez
Date: May 30, 2024

 Recoverable Signature

X Jim Swaney

Jim Swaney
Senior Air Pollution Control Engineer
Signed by: 4f6a3c69-5263-42b7-937d-4b3b524063e0

Senior Engineer

1.0 Type of Action and Summary of Changes.

This is an application for a new Title V permit for Pio Pico Energy Center covering three natural gas combustion turbine generators. 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) which requires permitting pursuant to 40 CFR §70.3.

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

This is the initial Title V application for this facility. This facility initially applied for this equipment under APCD2010-APP-001251 and was issued a Final Determination of Compliance on August 25, 2015, under APCD2014-APP-003627, pursuant to District Rule 20.5, which comprised the preconstruction review. A Startup Authorization for the three turbines was initially issued on February 10, 2017. This Startup Authorization was extended several times. Permits to Operate (PTOs) for each of the three emission units were issued in April 2024 and will be renewed annually. A Title V permit application was submitted on June 30, 2017, which

is the subject of this review. With construction being completed in July 2016, this application was submitted within 12 months of startup, in accordance with Rule 1410. Therefore, this application is timely, and an application shield is in place. This will be the initial Title V permit for this site.

Under application APCD2018-APP-005536, APCD2014-APP-003627 was amended to allow less stringent emission limits of NOx, CO, and VOC emissions during tuning operations. The revised conditions for this application have been approved and a revised Startup Authorization was issued upon completion of a 30-day public notice (see Section 7.0, District Rule 20.3, below). These conditions are effective in the active permits.

It was determined that the CO/VOC surrogate specified in the Final Determination of Compliance is not viable with this equipment. Due to the low emissions of VOCs, the ratio of CO to VOC emissions greatly varied during testing and, in many cases, VOCs were below detection level and a CO/VOC surrogate could not be established. As VOC emissions have consistently been shown to be very low and in compliance with all established emission limits, it was determined that compliance testing for VOC emissions will be sufficient to show continued compliance with the emission limits. To show compliance with VOC limits during startups and shutdowns, permit conditions will require a source test during these operating scenarios. The District requires that testing successfully demonstrate compliance once for each turbine during each Title V permit 5-year renewal cycle. The permit condition specifies source test methods to be used and require a source test protocol to be approved in advance by the District.

Lastly, it was determined that source testing to show compliance with the BACT limits specified in the permit conditions will be done following the same parameters of RATA testing. No changes will be made to the frequency of RATA testing.

3.0 Facility Description.

This site is a simple-cycle power plant with a total net output capacity of 319.2 MW consisting of three natural gas turbines. Each turbine is equipped with an oxidation catalyst and selective catalytic reduction (SCR) system.

Permit Number	Permit Description
APCD2024-PTO-004834	Turbine No. 1: A natural-gas-fired, simple-cycle, intercooled GE LMS100 PA combustion turbine generator rated at 1000 MMBtu/hr (HHV) heat input and 106.4 MW, Serial Number 7244965, equipped with an evaporative cooler for the inlet air; a compressor intercooler utilizing a heat exchanger and a shared partial dry cooling system with a wet surface air cooler; a continuous emission monitoring system (CEMS) for NOx, O2, and CO; a data acquisition and handling system (DAHS) to record key operational parameters; water injection; a selective catalytic reduction system (SCR); an ammonia vaporization system, and an oxidation catalyst.

APCD2024-PTO-004835	Turbine No. 2: A natural-gas-fired, simple-cycle, intercooled GE LMS100 PA combustion turbine generator rated at 1000 MMBtu/hr (HHV) heat input and 106.4 MW, Serial Number 7244966, equipped with an evaporative cooler for the inlet air; a compressor intercooler utilizing a heat exchanger and a shared partial dry cooling system with a wet surface air cooler; a continuous emission monitoring system (CEMS) for NOx, O2, and CO; a data acquisition and handling system (DAHS) to record key operational parameters; water injection; a selective catalytic reduction system (SCR); an ammonia vaporization system, and an oxidation catalyst.
APCD2024-PTO-004836	Turbine No. 3: A natural-gas-fired, simple-cycle, intercooled GE LMS100 PA combustion turbine generator rated at 1000 MMBtu/hr (HHV) heat input and 106.4 MW, Serial Number 7244967, equipped with an evaporative cooler for the inlet air; a compressor intercooler utilizing a heat exchanger and a shared partial dry cooling system with a wet surface air cooler; a continuous emission monitoring system (CEMS) for NOx, O2, and CO; a data acquisition and handling system (DAHS) to record key operational parameters; water injection; a selective catalytic reduction system (SCR); an ammonia vaporization system, and an oxidation catalyst.

4.0 Title V Applicability & Acid Rain (Title IV).

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).

Pio Pico Energy Center is a major source for NOx, as shown in the Potential to Emit (PTE) table below. Therefore, the facility is subject to the Title V operating permit program.

The facility is also subject to the Acid Rain provisions under District Rule 1412 and Title IV of the Federal CAA.

For both reasons, the facility is subject to Title V Permitting.

5.0 Compliance History

During the initial permitting process, the facility operated under several variances that were granted by the District’s hearing board, including operations for commissioning of the turbines and tuning of the SCR system. The facility is not currently operating under any of these

variances. The facility has received several violations since startup, primarily for emission limit exceedances for NOx and CO. None of these violations are ongoing; however, a 2022 violation and a 2024 violation are still being settled between the District and the facility.

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.

Title V Major Source Determination:				
(Tons/year)				
Pollutant	Threshold	Facility Actual Emissions	Facility Potential to Emit	Major Source
Highest Federal HAP	10	0.3	3.9	No
Sum of Federal Haps	25	0.4	6.2	No
NOx	25	4.8	70.41	Yes
VOC	25	0.4	19.41	No
PM10	100	4.5	37.19	No
SOx	100	0.3	4.12	No
CO	100	2.2	96.29	No

Potential emissions for all emissions are based on the FDOC for the facility (August 2015).

As outlined in the FDOC, the criteria pollutant emissions are the total annual emissions allowed by permit conditions.

The HAP emissions are not directly limited by permit conditions and are based on the heat input to the turbines.

Actual emissions are from the District’s approved 2022 emissions inventory report (September 2023). The highest federal HAP reported was formaldehyde.

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.

Since this is the initial application Title V application, CAM is only required for emission units with post-control emissions of an applicable regulated pollutant that are equal to or greater than major source thresholds. The only pollutant that exceeds major source thresholds at this facility is NOx. However, the NOx PTE for each emission unit is 23.5 tons/year, which is less than major source thresholds.

Additionally, the gas turbines are equipped with CEMS and are subject to an NSPS rule with prescribed monitoring, and therefore CAM will also not be required in the future pursuant to §64.2(b)(1)(vi), as outlined below. The turbines are required to operate and maintain the CEMS to measure NOx, CO, and NH3 pursuant to District Rules 20.1, 20.3, 69.3.1 and 40 CFR60 subpart KKKK.

§ 64.2 (b)(1)(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)(1)(vi).

8.0 Applicable Requirements

The following table summarizes the rules and requirements applicable to this facility and is followed by a discussion of the most notable of these requirements. These requirements and supporting analysis were previously included in an EPA comment period and public notice during review of the initial applications for this equipment. This document, “Final Determination of Compliance Amendment Pio Pico Energy Center” is attached and contains more detailed discussion of specific requirements of applicable rules.

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
SDAPCD Reg. II	11	Exemptions
SDCAPCD Reg. II	19	Provision of Sampling & Testing Facilities
SDCAPCD Reg. II	19.3	Emission Information
SDCAPCD Reg. II	20	Standards for Granting Permits
SDCAPCD Reg. II	20.1	New Source Review
SDCAPCD Reg. II	20.2	New Source Review
SDCAPCD Reg. II	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. V	98***	Breakdown Conditions: Emergency Variance
SDCAPCD Reg. VI	101	Burning Control

Facility-wide Prohibitory and Other Requirements

Regulation	Rule Citation	Title
SDCAPCD Reg. IV	50	Visible Emissions
SDCAPCD Reg. IV	51	Nuisance
SDCAPCD Reg. IV	52	Particulate Matter
SDCAPCD Reg. IV	54	Dust and Fumes

SDCAPCD Reg. IV	67.0.1	Architectural coating
SDCAPCD Reg. X	40 CFR 60 Subpart A*	NSPS General Provisions
SDCAPCD Reg. X	40 CFR 63 Subpart A*	NESHAP General Provisions
SDCAPCD Reg. XII	1200**	Toxic Air Contaminants – New Source Review
SDCAPCD Reg. XII	1206 ****	Asbestos Removal, Renovation, and Demolition
40 CFR Part 61	Subpart M****	NESHAP - Asbestos
40 CFR Part 74	Part 74	Acid Rain

**The District has adopted these rules by reference; however, any changes made to these regulations at the federal level are not immediately adopted. In the event this creates a conflict between the District adopted and federal rules, the more stringent requirements will apply.*

***Not federally enforceable*

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

***** The District issued its own Asbestos Rule 1206 intended to be as stringent as Subpart M. The facility is subject to the most stringent requirements of either rule, which at the time of this report is ensured by compliance with Rule 1206.*

Permit Specific Applicable Requirements:

SDAPCD Permit No.	Title V Permit No.	Permit Description	Applicable Rules
APCD2024-PTO-004834, APCD2024-PTO-004835, APCD2024-PTO-004836	APCD2024-TVP-00048	Gas Turbine Engine Generator	20.3, 50, 51, 53, 69.3.1, NSPS KKKK

Emission Limitations:

Combustion Turbines	
Pollutant	Primary Limiting Regulation(s)
NOx	Rule 20.3 (NSR); 69.3.1; 40 CFR 60 Subpart KKKK
VOC	Rule 20.3
PM10	Rule 20.3; Rule 53 (PM)
SO2	Rule 20.3; Rule 62; Rule 53; 40 CFR 60 Subpart KKKK
CO	Rule 20.3 (AQIA only)
Toxic Pollutants	Rule 1200

District Rule 20.3 (NSR)

This rule provides for new source review at any new or modified stationary source. Section 20.3(d)(1) requires any new or modified emission unit that increases its potential to emit and results in a post-project potential to emit (PTE) of 10 lbs/day or greater to apply Best Available Control Technology (BACT) for NO_x, VOC, SO_x, and PM₁₀. Additionally, this section requires Lowest Achievable Emission Rate (LAER) for new major sources or for contemporaneous emission increases equal to or greater than major modification thresholds at existing major sources. For this project, LAER was triggered for NO_x emissions. The emission limits specified in the permit conditions give BACT and LAER limits for each applicable pollutant. Generally, these are the most stringent quantitative limits cited in the permits.

Additionally, permit conditions specify emission limits for NO_x, CO, and VOC emissions from each turbine exhaust which are based on Section 20.3(d)(2) of this rule. This subsection requires an air quality impact analysis (AQIA) for each applicable air contaminant. An AQIA was performed at the time of the FDOC and the permit limit for NO_x ensures emissions do not exceed those considered in the AQIA. No exceedances of the National Ambient Air Quality Standards (NAAQS) were indicated in the results of the AQIA.

After the issuance of the FDOC, the applicant amended the application under APCD2020-APP-005536 to allow higher NO_x, CO, and VOC emissions during tuning operations. The existing BACT and LAER determinations continue to apply to these amendments. Additionally, revised modeling was done under expected worst-case hourly and annual emission rates during tuning operations and it was determined that there will be no violations of any national or state ambient air quality standards during these conditions. A revised AQIA 30-day public notice was performed concurrently with the 45-day Title V public notice.

District Rule 53

This rule limits emissions of PM resulting from the burning of carbon containing material. This rule also limits emissions of gaseous sulfur compounds not produced from fuel combustion. The turbines and emergency engine are subject to the PM limits. Preconstruction review determined that all the applicable equipment meets the requirements of this rule. The standards are written into conditions within District permits and are referenced accordingly.

District Rule 62

This rule sets limits on fuel sulfur content. Natural gas combusted in the turbines is required to be California Public Utility Commission (PUC) grade, i.e., ≤ 5 grains sulfur per 100 ft³ of gas, which is more stringent than this rule. The standards are written into conditions within District permits and are referenced accordingly.

District Rule 69.3.1

This rule limits NO_x emissions from stationary turbines. The standards of this rule are superseded by the NO_x limits established for compliance with BACT and LAER requirements in accordance District Rule 20.3 as discussed above.

Federal Acid Rain Program (40 CFR Parts 72, 73, and 75)

This facility is subject to Title V permitting because it is subject to the federal Acid Rain program. Therefore, both the District permits and the body of the Title V permit include conditions pursuant to the Acid Rain program, specifically 40CFR §72, 73, and 75.

40 CFR 60 Subpart KKKK

This subpart applies to stationary combustion turbines with a heat input at peak load of 10 MMBtu/hr (HHV) or greater which commenced construction, modification, or reconstruction after February 18, 2005. The turbines at this site meet these criteria and are subject to this rule.

Subpart KKKK limits NO_x emissions to 25 ppm at 15% oxygen. The BACT limit for NO_x, pursuant to District Rule 20.3, is more stringent than that of this Subpart. However, the BACT limit does not apply during periods of startup, shutdown, or tuning operations. Therefore, Subpart KKKK limits are included in permit conditions to ensure compliance during these scenarios.

Subpart KKKK limits SO₂ emissions to 0.90 lbs/MW-hr gross output or 0.060 lbs/MMBtu/hr heat input. Permit conditions require the use of PUC quality natural gas which limits the sulfur content to 5 grains per 100 standard cubic feet in accordance with California PUC General Order 58-A. By complying with this limit, the source will comply the SO₂ standards of this rule.

8.0 Monitoring, Record-Keeping, and Reporting

Permit enforceability is dependent largely on sufficient monitoring, record-keeping, and reporting (MRR), all of which must be effectively tied to the emissions limits and other requirements under applicable regulations. The District permits that are incorporated into the Title V permit at Appendix A contain substantial monitoring, record-keeping, and reporting requirements. The body of the Title V permit contains additional MRR pursuant to District Regulation XIV (Title V) to further strengthen the permit. Below is a discussion of the more notable MRR.

All of the turbines are required to be source tested to ensure emissions of NO_x, CO, VOC, PM₁₀, and ammonia comply with the emission requirements of the permits.

Monitoring and testing are required for each turbine in the District Permits to Operate. Continuous emissions monitoring systems (CEMS) are required for monitoring emissions of NO_x, CO, SO₂ and NH₃. Requirements addressing the CEMS are specified in 40 CFR 60 Subpart KKKK, District Rule and 69.3.1, and the federal Acid Rain program under 40CFR §§ 72 and 75. The accuracy of the CEMS system is also tested using a relative accuracy test audit (RATA) conducted according to the frequencies defined in 40 CFR part 75.

9.0 Permit Shield

Pursuant to District Rule 1410(p) and 40CFR §70.6(f), a Title V permit may include a provision stating that compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the permit issuance date. The applicant did not request a permit shield and none is included in the permit.

10.0 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 the District's website and the public notice will be published in a newspaper. The District will incorporate any suggested changes made by EPA or the public if necessary and will re-notice if significant changes are made.

11.0 Conclusions / 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.

12.0 Attachments

The following are attached:

- Application Package
- Draft Permit
- Public Notice