

STATEMENT OF BASIS

Title V Permit Renewal

Facility Name: SDG&E Cuyamaca Peak Energy Plant

Title V Application Number: APCD2020-APP-006451

Title V Permit Number: APCD2008-TVP-979681

Facility ID: APCD2001-SITE-04087

Equipment Address: 200 N. Johnson Ave, SD, CA 92020

Facility Contact: Brain Yim

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Permit Engineer: Melissa Adams

Date: 7-19-21

Senior Engineer: Nick Horres

Purpose of Statement of Basis – Title V Permit Renewal plus other changes below:

1. Type of action and summary of changes

The applicant requests issuance of a renewal Title V permit for SDG&E Cuyamaca Peak Energy (Title V permit APCD2008-TVP-979681). 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, the following Title V applications have been submitted and will be incorporated into the Title V permit renewal:

APCD2017-APP-005184 Minor modification to the Title V permit to add a new emergency black start engine.

APCD2017-APP-005201 Minor modification to the Title V permit to change pollutant limits during tuning, testing and maintenance for the combustion turbine set in accordance with manufacturer's specifications.

The two actions above represent minor modifications because they do not trigger NSR or cause a violation. Also, the changes do not relax monitoring, recordkeeping or reporting, nor do they trigger a change in federal emission limits, since the only emission limit change is a clarification of manufacturer recommendations during tuning, testing and maintenance. The changes do not

allow exemption from specific rule requirements. In addition, the changes are not Title I modifications and do not require MACT. The changes were approved in District Authority to Construct applications. A minor modification designation is appropriate for those two actions.

2. History of Title V Applications and District Modification Applications Since Previous Renewal.

The renewal application was received on October 10, 2020. The Title V permit expires on October 25, 2021. This renewal application was submitted at least 12 months but not more than 18 months prior to permit expiration, in accordance with Rule 1410. The application therefore is timely.

The history of District modifications consists of the two applications in the table below. The applications were submitted under the District's local permitting program and each is associated with a corresponding Title V application.

Application History for District Modifications				
Application Number	Application Summary	Description	Affected Emission Units	Outcome
APCD2017-APP-005183 (related APP to APCD2017-APP-005184 below)	Install a new black start emergency engine,	Emergency/Black-start Natural Gas Engine: lean burn controlled; 1114 bhp	Engine Permit APCD2020-PTO-003552	New engine approved and active
APCD2017-APP-004762 (related APP to APCD2017-APP-005201 below)	Clarify tuning, testing and maintenance emission allowances per manufacturer	Turbine Set	Turbine Permit APCD20008-PTO-976021	Paper changes

The following table lists applications at this facility to modify the Title V permit.

Title V Application History			
<u>Application Number</u>	<u>Application Description</u>	<u>Equipment</u>	<u>Approved?</u>
APCD2015-APP-004071	Latest Title V Renewal	Turbine set	Yes
APCD2017-APP-005184 (related APP to APCD2017-APP-005183)	Minor Modification to add a black start engine	Engine	Included in current renewal action
APCD2017-APP-005201 (related APP to APCD2017-APP-004762)	Minor Modification to incorporate added conditions that clarify tuning, testing and maintenance per manufacturer	Turbine set	Included in current renewal action
APCD2020-APP-006451	Title V Current Renewal	Turbine set and engine	Current Renewal

3. Facility Description

The facility consists of an emergency black start lean burn engine fired on natural gas and a Pratt & Whitney Swift-Pac turbine set with two simple cycle natural gas turbines with a common generator and common exhaust. The turbines are equipped with a selective catalytic reduction system (SCR), an oxidation catalyst and a continuous emission monitoring system (CEMS).

Permit Number	Equipment Description
APCD2008-PTO-976021	Gas Turbine (49.5 MW): Pratt & Whitney, Model FT-8 (DLN), Swift-Pac (two simple cycle gas turbines with common generator and exhaust), 500 MMBtu/hr total heat input, natural gas fired; exhaust air cooling, a peerless Manufacturing Company Selective Catalytic Reduction (SCR) System with a Haldor Catalyst, and an Engelhard Oxidation Catalyst System; A Continuous Emission Monitoring System (CEMS), And Continuous Parametric Monitors.

APCD2020-PTO-003552	Emergency/Black-start Natural Gas Engine: Caterpillar Model G3512, S/N CATG3511PE2P00212; Engine Family HCPXB51.8CZL; lean burn controlled; 1114 bhp rated; turbocharged with charge air cooler; driving a 750 kW emergency generator. (Manufactured after January 1, 2009)
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4. Title V Applicability & Acid Rain

The facility is subject to the acid rain provisions under District Rule 1412 and Title IV of the federal CAA, as given at 40 Code of Federal Regulation (CFR Subpart C, Part 72.6(a)). Under the acid rain program, an “affected” source (a term specifically defined in Title IV of the CAA, and which applies to this facility) is subject to Title V permitting pursuant to District Rule 1401 and 40 CFR Subpart C, Part 70.3(a)(4).

Therefore, since the facility is subject to Title IV, the facility is subject to the Title V operating permit program.

5. Potential to Emit and Actual Emissions

The following table shows the actual and potential emissions for the facility. For all pollutants, emissions are well below major source thresholds. The facility is an area source for HAPS (hazardous air pollutants).

Potential to Emit Tons per Year				
Pollutant	Thresholds	*Facility Actual Emissions	**Potential to Emit	Major Source
Highest Federal HAP	10	< 10	-	No
Sum of Federal HAPs	25	<25	-	No
NOx	100	0.533	31.6	Yes***
VOC	100	0.069	5.6	No
PM10	100	0.027	14.4	No
SOx	100	0.026	4.3	No
CO	100	2.321	99.9	No

*The actual emissions are from the District’s 2019 emission inventory.

**The potential emissions are from the engineering evaluation for APCD2016-APP-004762.

***EPA has recently proposed to lower the District's attainment status for ozone which will result in lowering the NOx/VOC major source thresholds to 25 tpy. At the time of this report, these are not finalized, but once they become fully effective, this facility will be a major source of NOx

6. 40 CFR Part 64 CAM (Compliance Assurance Monitoring)

The turbine permit requirements already specify the use of a certified CEMS (Continuous Emission Monitoring Systems) which ensures that they are not subject to CAM requirements.

7. Applicable Requirements

General Permit Program Applicable Requirements

Regulation	Rule Citation	Title
SDCAPCD Reg. II	10	Authority to Construct Required
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 (NSR)
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
SDCAPCD 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 Emission Reducing
40 CFR Part 89	Part 89	VOC Standards for Consumer Products

Facility-wide/Other Prohibitory & Misc. Requirements

Regulation	Rule Citation	Title
SDCAPCD Reg. II	19.2	Continuous Emission Monitoring Systems
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

* 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.	Permit Description	Applicable Rules
APCD2008-PTO-976021	One natural gas twin-pack (two simple cycle combustion turbines with common generator and exhaust):	SDAPCD Reg. IV, Rules 50, 51, 52, 53, 62, 63, 69.3.1., 40 CFR 60-Subpart KKKK
APCD2020-PTO-003552	Emergency black start engine: fuel is natural gas	SDCAPCD Reg. IV, Rules 50, 51, 52, 53, 59, 62, 69.4.1, 40 CFR 60 Subpart JJJJ, 40 CFR 63 Subpart ZZZZ

Primary Limiting Regulations: Turbine set

Combustion Turbine Set	
Pollutant	Primary Limiting Regulations
NOx	Rule 20.2 (NSR); 40 CFR 60 Subpart GG
SO2	Rule 20.2; Rule 62; Rule 53; 40 CFR 60 Subpart GG
VOC	Rule 20.2
CO	Rule 20.2 (AQIA only)
PM10	Rule 20.2; Rule 53 (PM)
Toxic Pollutants	Rule 1200

Primary Emission Limiting Regulations: Engine

Emergency Black Start Lean Burn Engine

Pollutant	Primary Limiting Regulations
NOx	Rule 69.4.1; 40 CFR 60; 40 CFR 60 Subpart JJJJ (black start engine)
SO2	Rule 62; Rule 69.4.1 17 CCR 93115; 40 CFR 60 Subpart JJJJ (black start engine)
VOC	40 CFR 60 Subpart JJJJ (black start engine)
CO	40 CFR 60 Subpart JJJJ (black start engine)
PM10	Rule 20.2; Rule 53 (PM) 40 CFR 60 Subpart JJJJ (black start engine)
Toxic Pollutants	Rule 1200
Federal HAPs	40 CFR 63 Subpart ZZZZ

8. Updates to the Title V Permit Incorporated into this Action

New black start natural gas fired engine:

District Rule 69.4.1 Stationary Reciprocating Internal Combustion Engines-Best Available Retrofit Control Technology was modified in 2020, and the updated requirements are already incorporated into the District permit.

The natural gas lean burn engine is subject to NESHAP ZZZZ and NSPS JJJJ. It was reviewed for compliance during initial permitting and has an EPA Certificate of Conformity for Subpart JJJJ emissions. The relevant conditions to ensure compliance with these rules were included on the authority to construct and permit to operate. A minor modification to add the engine to the Title V permit was filed for this engine at the time of installation, and the minor modification is incorporated into this action.

Existing Turbine Set:

The gas turbine set is subject to NSPS subpart GG based on the construction date prior to 2/18/2005. The turbine permits were reviewed as part of the issuance of an ATC (Authority to Construct) under application APCD2016-APP-004762 which also included the addition of manufacturer specifications during tuning, testing and maintenance, as detailed in the following paragraphs.

In District application APCD2017-APP-004762, and subsequently in the Permit to Operate APCD2008-PTO-976021 for the turbine set, changes to conditions to allow exemptions from NOx and CO emission limits during testing, tuning and maintenance, were added as required under District Prohibitory Rule 69.3.1 and District NSR Rule 20.2. The application also added conditions implementing NSPS subpart GG that were mistakenly omitted. Title V minor modification application APCD2017-APP-005201 was submitted with this action to incorporate this change into the Title V permit.

This turbine currently is allowed 30-minutes for each startup and shutdown where the BACT emission limit does not apply. Separately, rule 69.3.1 sets a NOx emission limit based on the turbine size/design but allows for a 2-hour startup and shutdown window. Since the District cannot approve a request for an exemption from this emission limit during tuning/testing, an

additional permit condition will be added to the permit to include the emission limit of this rule that will apply after the 2-hour window during tuning and testing events when the BACT limit does not apply. The following conditions were added to the PTO, and will be added to the Title V permit with this renewal:

For the purposes of this permit, approved periods of testing, tuning and maintenance shall include the following:

- a. Operation for conducting reliability, baseline or other related testing mandated by standards issued by the Federal Energy Regulatory Commission (FERC), or its 3rd party delegates including the North American Reliability Corporation (NERC), Western Electric Coordinating Council (WECC), or other related organizations.
- b. Operation for tuning, testing or maintaining components of the gas turbine, emission control system(s) or electrical components in order to restore or measure system efficiency or performance.
- c. Operation for tuning, testing or maintaining components of the gas turbine or emission control system(s) for purposes recommended by the manufacturer of the gas turbine or component(s) or servicing company for ensuring proper and efficient operation of the system.

[Rule 20.2(d)(1)]

In order to claim that a period of operation meets the requirements for an approved period of testing, tuning and maintenance, the owner or operator must maintain the following records for each period:

- a. Date(s) and time(s) of operation
- b. Purpose of operation
- c. Any applicable test procedure, regulation, or other records to demonstrate the need or purpose for the operation
- d. Technical justification that steady-state emission standards cannot be met during this operation. Acceptable technical justifications include: need to operate turbine for extended period of time at low load, need to operate turbine in transient modes that exceed the ability of the emission controls to maintain steady state emission levels, tuning of the system or emission controls that involve operation outside the normal acceptable operating ranges for the emission control system, and any other operating scenarios that have been approved by the District.

[Rule 20.2(d)(1)]

Emissions of nitrogen oxides from the unit exhaust stack shall not exceed 13.4 ppmvd at 15 percent O₂, calculated as a 1 clock hour average pursuant to 69.3.1(g)(7). This limit shall not apply during startups and shutdowns for a period of up to 120 minutes each occurrence. [Rule 69.3.1]

Emissions of nitrogen oxides from the unit exhaust stack shall not exceed 102 ppmvd at 15 percent O₂, calculated as a 4 hour (unit operating hour) average pursuant to 40 CFR § 60.334(j)(1)(iii)). This limit applies at all times. [40 CFRsubpart GG § 60.332(a)(1)]

Approved periods of testing, tuning and maintenance shall not exceed 48 hours per calendar year for any of these purposes. Any period of operation where the emission

controls are in full operation as required by this permit and as shown by DAS/CEMS records shall not be included in determination of these limits. [Rule 20.2(d)(1)]

Annual emissions during normal operations would not change as a result of the proposed revisions to the conditions related to tuning, testing and maintenance of the turbine set. There is no increase in permitted annual operating hours associated with this permit modification application. The tuning and typically one day every 5 years of Western Electric Coordinating Council testing can be accomplished within the existing facilities' annual emissions limits. Actual annual emissions are expected to be well below permit condition limits under normal conditions.

9. Multiple Applicable Requirement Streamlining

The applicant requested multiple applicable requirement streamlining. The District reviewed the request, and notes that while we don't disagree with the majority of requests, we believe that all eligible requirements have already been streamlined and are contained in the equipment specific permit conditions for the turbines in Appendix A.

10. Permit Shield

The previously issued permit included permit shields and the applicant requested the same permit shields. The District reviewed these requests and made determinations as follows:

Existing Permit Shields:

Requirement	Basis of Shield/Change from previous permit
SDCAPCD Rule 53 (sulfur limit as SO ₂)	Removing this shield from the permit as Rule 53 applies to the black start engine
SDCAPCD Rule 62 (sulfur content of fuels)	Removing this shield from the permit since being subject to a permit condition to implement the rule is not sufficient to justify a permit shield.
SDCAPCD Rule 68	Not applicable per Rule 69.3 §(a) and 69.4.1
SDCAPCD Rule 69.3	Subsumed by NSR limits; Rule 69.3.1; and MRR
SDCAPCD Rule 66 (organic solvents)	The District agrees that this rule does not apply to any of the permitted emission units; however, the District proposes to remove this shield because this rule could apply to contractor equipment or newly installed equipment, and granting a permit shield would only serve to restrict the source's ability to make operational changes under less stringent modification pathways

40 CFR 60 Subpart GG	As previously identified in the permit changes above, there are situations where Subpart GG requirements are not subsumed by other limits
40 CFR 64— Compliance Assurance Monitoring (CAM)	Removing this permit shield since the facility is not subject to CAM regardless of permit shield
SDCAPCD Rule 52	The District agrees that this rule does not apply to any of the permitted emission units; however, the District proposes to remove this shield because this rule could apply to contractor equipment or newly installed equipment, and granting a permit shield would only serve to restrict the source's ability to make operational changes under less stringent modification pathways
SDCAPCD Rule 54	The District agrees that this rule does not apply to any of the permitted emission units; however, the District proposes to remove this shield because this rule could apply to contractor equipment or newly installed equipment, and granting a permit shield would only serve to restrict the source's ability to make operational changes under less stringent modification pathways

11. 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, affected states and bands of Indians through a public notice period and an EPA review period. Notice will be provided to the EPA electronically through the EPS and will be sent electronically to affected states and bands of Indians. The public notice and associated documents will be provided on the District website and the public notice will be published in a newspaper.

12. 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 proposed renewal Title V permit to be issued following public notice, EPA review and response to any comments.

13. Attachments

The following are attached:

- Application Package
- Draft Permit
- Public Notice