

June 23, 2023

**IMPERIAL COUNTY AIR POLLUTION CONTROL DISTRICT
Authority to Construct Review**

Permit: #1365A-1

Company Name: Imperial Irrigation District

Facility Name: Rockwood Gas Turbine Unit 1

SIC Code: 4911 (Electric Services)

Applied For: Permit Amendment

Source Type: Power Plant

Mailing Address: 333 East Barioni Blvd.
Imperial, CA 92251

Location: 4195 Dogwood Rd.
Brawley, CA 92227

Responsible Official: Mr. Kraig Strauch,
Manager of Generation

Plant Site Contact: Jack Shelnutt,

Telephone: (760) 427 7447

Permit Reviewer: Jesus Ramirez

Introduction

Imperial Irrigation District (IID) has submitted a permit application to amend the Air District Permit No. 1365A to change the permit conditions for the Rockwood Unit 1 to be consistent with the requirements of Rule 400.1, Stationary Gas Turbines. Rule 400.1 was adopted by the Air District on February 23, 2010 to address the implementation of federal Reasonable Available Control Technology (RACT). This rule establishes NOx limits of 42 parts per million by volume (ppmv) for gaseous fuel-fired units and 65 ppmv liquid fuel-fired units. However, the rule contains an exemption for gas turbines which operates less than 400 hours per calendar year. The proposed ATC Permit 1365A-1 will exempt the Rockwood Unit 1 from compliance with Rule 400.1 NOx emissions limits by restricting operation to no more than 400 hours per calendar year.

Description of the Source:

The IID, Rockwood Generation Station, operates two turbines that were installed in 1979 and have installed water injection for NOx emission control. Both units are operated by Imperial Irrigation District (IID) as “peaking” units that serve to provide additional electricity to the grid during periods of peak electrical demand, generally (although not limited to) the summer months. Imperial Irrigation District’s Rockwood Unit 1 gas turbine is one of two 22.35 MW Pratt Whitney Simple Cycle gas turbines located on Dogwood Road South of Brawley, Ca. The turbine is a peaking unit and historically is fired less than 100 hours a year since its construction in 1981. Unit 1 is fuel primarily with natural gas but may also be fueled with diesel oil. Unit 1 is the priority turbine for peaking generation events at the facility.

Air Emissions

Emission factors for all pollutants evaluated were based on source test performed in October and December 2021. The Annual Emissions estimate for Unit 1 was made based on firing the turbine on either natural gas or diesel for the total permitted hours of operation per year.

Unit 1 Actual Emissions - Natural Gas

Units	NOx	CO	SOx	PM10
Lb/MMbtu	0.165	0.626	---	---
Lb/hr	73.5	280	0.136	3.65
Hrs/year	400	400	400	400
Tons/year	14.70	56	0.027	0.73

Unit 1 Actual Emissions - Diesel

Units	NOx	CO	SOx	PM10
Lb/MMbtu	0.220	0.159	---	---
Lb/hr	107.4	77.8	5.93	4.95
Hrs/year	400	400	400	400
Tons/year	21.48	15.56	1.19	0.99

Applicable Rules:

1. 201, Permits Required
2. 206, Processing of Applications
3. 207, New and Modified

Compliance Status:

- In Compliance
In Compliance

	Stationary Source Review	In Compliance
4.	208, Permit to Operate	In Compliance
5.	400, Fuel Burning Equipment	In Compliance
6.	400.1 Stationary Gas Turbines	In Compliance
7.	401, Opacity of Emissions	In Compliance
8.	407, Nuisance Rule	In Compliance
9.	CA H&SC Section 42301.6	In Compliance

Applicable Rules and Regulations

The following section summarizes the Air District Rules and Regulations which are applicable to the gas turbine Unit 1 that is operated by the Imperial Irrigation District.

Rule 201 Permits Required

Except as exempted within the Air District Rules and Regulations, new or modified sources which may emit or control air contaminants must obtain written authorization from the ICAPCD prior to construction. The gas turbine which serves the Imperial Irrigation District emits air contaminants and as such require an Authority to Construct and Permit to Operate from the Air District.

Rule 206 Processing of Applications

This Rule contains the guidelines established by the APCD for the processing of applications and issuance of permits. This project is classified as a discretionary permit project and will be processed according to the procedures of Rule 206. Due to the fact that the existing source's daily PTE for NO_x emissions continues to be greater than 100 pounds per day, the APCD will fulfill the public notice and review requirements of Rule 206 for discretionary permits.

Rule 207 New and Modified Stationary Source Review

Rule 207 provides preconstruction review requirements for new and modified stationary sources to ensure that the operation of such sources do not interfere with the attainment or maintenance of ambient air quality standards.

Rule 207.C.1.a requires Best Available Control Technology (BACT) for equipment with the potential to emit 25 pounds per day or more of any nonattainment pollutant or their precursors. However, per Rule 207.C.1.f since the modification to the existing emission unit is used solely for the purpose of compliance with District rule (Rule 400.1), the emissions unit is exempt from BACT requirements.

Rule 207.C.2.a requires that any new or modified emission source with a potential to emit (PTE) greater than 137 lb/day for ROCs, PM₁₀, NO_x or SO_x emissions be offset by the permittee. The proposed modification to the ATC conditions will result in a reduction to

the hours of operation for the turbine and therefore a reduction of potential to emit, no emission offsets are required for this project.

Rule 208 Permit to Operate

The ICAPCD may inspect and evaluate the equipment prior to allowing the project to operate under its Permit to Operate. The permittee is aware of this requirement and is expected to fully comply.

Rule 400 Fuel Burning Equipment

This rule establishes a 140 pounds per hour of NO_x maximum emission limit for any stationary source unit. The rule requires source testing every 12 months or less, and specific test methods for measuring stack flow rate and NO_x emissions. Based on the most recent source testing and the use of the water injection system to control NO_x emissions, the Rockwood facility is in compliance with this rule.

Rule 400.1 Stationary Gas Turbine(s)

This rule establishes NO_x emission limits for stationary gas turbines of 42 ppmv when operated on gas fuel and 65 ppmv when operated on liquid fuel. However, it provides an exemption from compliance with these limits for stationary gas turbines which operates less than 400 hours per calendar year. The facility is required to comply with this exemption by maintaining operating records.

Rule 401 Opacity of Emissions

The opacity of the emissions produced by the stationary gas turbine, other than uncombined water vapor, may not be as dark or darker as designated as No. 1 on the Ringlemann Chart (20% opacity) for a period or periods aggregating more than three minutes in any one hour. The Permittee will comply with this Rule by utilizing proper operating and maintenance practices for the emissions unit.

Rule 407 Nuisances

This rule prohibits the discharge from any source air contaminants which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, which endanger the comfort, repose, health or safety of any such persons or the public, or which cause or have a natural tendency to cause injury or damage to business or property. The Imperial Irrigation District is required to comply with this rule at all times that the emissions unit is operating at this location.

California Health & Safety Code 42301.6

Prior to approving an ATC application or modification of a source which emits hazardous

air contaminants located within 1,000 feet from the outer boundary of a school site, the Air Pollution Control Officer (APCO) will prepare a public notice in which the proposed project or modification is fully described. Based on a special analysis performed using Google Earth™, APCD Staff has determined that the distance to the nearest school site, Witter Elementary School, located at 150 K Street, Brawley, is approximately at 3,625 feet from the Rockwood facility. Therefore, the permittee is deemed in compliance with this requirement.

OPERATIONAL SPECIFICATIONS AND LIMITATIONS ON PERMIT TO OPERATE

A. GENERAL CONDITIONS

1. Operation of this equipment shall be in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.
2. Operation of this equipment shall be in compliance with all applicable APCD Rules and Regulations.
3. This permit does not authorize the emissions of air contaminants in excess of those allowed by U.S.EPA (Title 40 of the Code of Federal Regulations), the State of California Division 26, Part 3 of the Health and Safety Code, or the APCD Rules and Regulations.
4. This permit cannot be considered permission to violate applicable existing laws, ordinances, regulations, rules or statutes of other governmental agencies.

B. OPERATING PARAMETERS

1. The gas turbine shall not exceed more than 400 hours of operation in any one calendar year.
2. The sulfur content of the gas turbine diesel fuel shall not exceed 0.5% by weight.
3. The water injection system for the gas turbine shall inject water at a rate such that the NOX concentration does not exceed 75 ppmv@15% O₂. Unless otherwise established by source tests, the injection rate of water into the turbine shall be no less than the following:
 - a. 5.0 gpm at an average turbine exhaust temperature of 900 degrees Fahrenheit and 14.0 gpm at an average turbine exhaust temperature of 1050 degrees Fahrenheit when firing diesel fuel.
 - b. 3.5 gpm at an average turbine exhaust temperature of 100 degrees Fahrenheit and 5.5 gpm at an average turbine exhaust temperature of 1050

degrees Fahrenheit when firing gas fuel.

C. EMISSION LIMITS

1. The gas turbine stack opacity shall not exceed 20% (Ringlemann 1) for a period or periods aggregating more than 3 minutes in any one hour.
2. The gas turbine stack emissions shall not exceed 140 lb/hr NOX.

D. MONITORING REQUIREMENTS

1. IID shall source test the gas turbine for NOX at full generating capacity no later than the end of September 2000. Thereafter source testing shall be conducted every five years or at the request of the Air Pollution Control Officer. Source test protocol shall be submitted to the APCD no later than 30 days before the scheduled test. The APCD will be notified in writing two weeks prior to a scheduled source test.
2. Record the gas turbine daily operating hours.
3. Record diesel fuel consumption in gallons, and the gas fuel consumption in million cubic feet.
4. Record the diesel fuel sulfur content in percent by weight for all diesel fuel used by the gas turbine.

E. REPORTING / RECORD KEEPING REQUIREMENTS

1. IID shall notify the APCD of any breakdowns as specified in Rule 111 - Equipment Breakdown.
2. Maintain on site all records generated by conditions D.2, D.3 and D.4. These records will be made available to the APCD upon request.
3. Submit an annual report to the APCD containing the information required by Conditions D.2, D.3 and D.4. This report shall reach the APCD by the end of February for the preceding operating year.
4. Submit to the APCD the number of operating hours on the gas turbine hour meter at the date of issuance of this permit.

Recommendations

Per the requirements of Air District Rule 206.C, this permit application is being processed as a Discretionary Permit since the current potential to emit (PTE) for NOx emissions for

the facility is greater than 100 pounds per day. Once the public review period has been completed the Air District will issue an Authority to Construct (ATC) permit.

2023 Permit Fees

Rule 302, Schedule 2. Fuel Burning Equipment Schedule

Total combustion turbine heat input (No. 2 Diesel) = 280.5 MMBtu/hr

(15,000 or greater x 1000 BTU/hr) = \$5,111.50 (paid)

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