ADEQ Arizona Department of Environmental Quality

DRAFT TECHNICAL SUPPORT DOCUMENT

TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY PERMIT No. 103231

I. INTRODUCTION

This Class I air quality renewal permit is for the continued operation of El Paso Natural Gas Company, LLC's (EPNG) Mojave Topock Compressor Station. Permit No. 103231 renews and supersedes Permit No. 76597.

A Class I air quality permit is required because the facility's potential to emit (PTE) for nitrogen oxides (NO_X), carbon monoxide (CO) is greater than 100 tons per year, and total hazardous air pollutants (HAPs) are greater than 25 tons per year pursuant to Arizona Administrative Code (A.A.C.) R18-2-101.75.c.

Permit No. 76597 had an expiration date of September 10, 2024, and the application for this permit renewal was submitted on March 7, 2024. This submission met the permit condition requiring that a complete and timely application be submitted by the facility at least six (6) months, but not earlier than eighteen (18) months, prior to the expiration date of the current permit.

A. Company Information

Facility Name: Mojave Topock Compressor Station

Mailing Address: 5151 E. Broadway, Suite 1680
Tucson, AZ 85711

Facility Location: 5255 East Needle Mountain Road
Topock, Arizona 86436

B. Attainment Classification

Mohave County, where EPNG Topock Compressor Station is located, is shown as unclassified or attainment for all criteria pollutants.

II. PROCESS DESCRIPTION

A. Process Equipment

The Mojave Topock Compressor Station is one of several stations that EPNG owns and operates to help provide natural gas compression to their pipeline network. The compression process at the facility is accomplished with the use of three identical two-stroke, lean-burn (2SLB) natural gas-

fired Reciprocating Internal Combustion Engines (RICE) (Cooper-Bessemer Model 8W330; CP-1, CP-2 and CP-3) that drive the compressor units. The Mojave Topock Compressor Station is unattended as the RICE are automated. The Standard Industrial Classification (SIC) code for the facility is 4922 (Natural Gas Transmission). The North American Industry Classification System (NAICS) code is 48621 (Pipeline Transportation of Natural Gas).

Compressors, driven by the natural gas fueled RICE, receive a flow of natural gas from a common pipeline system. The RICE operation is dependent on the amount of natural gas that is being transported to various customers along the pipeline system. The primary electric power used at the facility is provided by one of two identical four-stroke, lean-burn (4SLB) natural gas-fired auxiliary generators. EPNG is also authorized to bring a diesel-fired rental auxiliary generator on site when one of the existing auxiliary generators is out of service. The rental unit ensures operational continuity at the facility and will only be present when either of the existing natural gas-fired auxiliary generators is out of service and will only be used when the remaining auxiliary generator shuts down. Finally, the facility has a four-stroke, rich-burn (4SRB) natural gas-fired emergency generator that can be used to supply electricity to the nearby administrative building during power outages.

Depending on customer demand for natural gas, the amount of natural gas transported in the EPNG pipeline will vary. Due to this variance, the permit authorizes full operation of the RICE to meet the maximum potential demand for natural gas transportation services. However, for times when compression is not necessary due to the volume of natural gas being transported, EPNG will shut down operation of the RICE.

III. COMPLIANCE HISTORY

A. Report Reviews

EPNG received five (5) full inspections and one (1) partial inspections during the permit term. EPNG also submitted 10 compliance certifications. No permit deviations or excess emissions were reported during the previous permit term.

B. Performance Testing Results

EPNG conducted 25 performance tests during the previous permit term. All tests passed the required emission limits as detailed in Table 1 below.

Table 1: Performance Test Results

Emission Unit	Pollutant	Date of Test	Results of Performance Test (lb/hr)	Emission Limit (lb/hr)	Pass/Fail
A-01	NO_X	2/18/2020	15.21	24.34	Pass

Emission Unit	Pollutant	Date of Test	Results of Performance Test (lb/hr)	Emission Limit (lb/hr)	Pass/Fail
A-01	CO	2/18/2020	8.08	30.43	Pass
A-01	VOC	2/18/2020	1.74	6.09	Pass
A-02	NO_X	2/18/2020	13.56	24.34	Pass
A-02	CO	2/18/2020	8.10	30.43	Pass
A-02	VOC	2/18/2020	1.59	6.09	Pass
A-03	NO_X	2/18/2020	7.84	24.34	Pass
A-03	CO	2/18/2020	9.20	30.43	Pass
A-03	VOC	2/18/2020	1.63	6.09	Pass
Aux-01	NO_X	2/18/2020	0.90	6.39	Pass
Aux-01	CO	2/18/2020	3.49	9.58	Pass
Aux-01	VOC	2/18/2020	0.38	3.19	Pass
Aux-02	NO_X	2/18/2020	0.76	6.39	Pass
Aux-02	CO	2/18/2020	3.88	9.58	Pass
Aux-02	VOC	2/18/2020	0.43	3.19	Pass
A-01	NO_X	3/8/2021	10.27	24.34	Pass
A-01	CO	3/8/2021	9.79	30.43	Pass
Aux-01	NO_X	3/8/2021	1.25	6.39	Pass
Aux-01	CO	3/8/2021	3.36	9.58	Pass
A-02	NO_X	2/8/2022	18.96	24.34	Pass
A-02	CO	2/8/2022	6.62	30.43	Pass
Aux-02	NO_X	2/8/2022	0.49	6.39	Pass
Aux-02	CO	2/8/2022	3.42	9.58	Pass
A-03	NO_X	1/31/2023	16.98	24.34	Pass
A-03	CO	1/31/2023	7.59	30.43	Pass

IV. EMISSIONS

Emissions from the facility are calculated using permitted emission limits, emissions factors from Compilation of Air Pollutant Emissions Factors from Stationary Sources (AP-42) Section 3.2 titled Natural Gas-Fired Reciprocating Engines (07/2000), and emission factors from AP-42 Section 3.4 titled Large Stationary Diesel and All Stationary Dual-fuel Engines.

The facility is above major source thresholds for NO_X, CO, and HAPs. The facility's PTE is shown in Table 2 below.

Table 2: Potential to Emit (tpy)

Pollutant	Current PTE
NO_X	348.0
PM_{10}	18.0
$PM_{2.5}$	18.0
CO	443.0
SO_2	0.27
VOC	95.3
HAPs	30.6

V. VOLUNTARILY ACCEPTED EMISSION LIMITATIONS AND STANDARDS

The permit contains a voluntarily accepted operating limitation limiting the use of aux-1, aux-2, or aux-3 to only one engine operating at a time. The facility only needs one engine operating to provide power to the facility. Other engines are only in standby if the currently operating engine goes offline. To avoid triggering NSR requirements for the addition of aux-3, this voluntarily accepted emission limitation was included in Permit No. 103231.

VI. APPLICABLE REGULATIONS

Table 3 identifies applicable regulations and verification as to why that standard applies. The table also contains a discussion of any regulations the emission unit is exempt from.

Table 3: Applicable Regulations

Unit	Control Device	Rule	Discussion
Cooper Bessemer Engines & Caterpillar Generators	N/A	Arizona Administrative Code (A.A.C) R18-2-719	These standards are applicable to existing stationary rotating machinery not subject to a New Source Performance Standards (NSPS) or National Emission Standard for Hazardous Air Pollutants (NESHAP). The engines and generators are not subject to NSPS Subpart IIII because they are not compression ignition engines. The engines and generators are not subject to NSPS Subpart JJJJ because they were constructed prior to July 1, 2008. The Cooper Bessemer engines and Caterpillar generators do not have any requirements under NESHAP Subpart ZZZZ because they are existing 2-stroke and 4 stroke lean burn engines, respectively with a site rating of greater than 500 horsepower located at a major source for HAPs. In accordance with 40 CFR 63 63.6590(b)(3)(i) and (ii).
Emergency Generator	N/A	40 CFR 63 Subpart ZZZZ	The engine is subject to NESHAP Subpart ZZZZ because it is less than 500 horsepower and located at a major source for HAPs with a date of manufacture prior to June 12, 2006.

Unit	Control Device	Rule	Discussion
Rental Generator	N/A	40 CFR 63 Subpart ZZZZ 40 CFR 60 Subpart IIII	The rental generator is rated more than 500 hp and constructed after December 19, 2002 and is considered a new stationary RICE at a major source of HAPS. Therefore, it is subject to the requirements in NESHAP Subpart ZZZZ. The rental generator commenced construction after July 11, 2005 and was manufactured after April 1, 2006. Therefore, it is subject to the requirements in NSPS Subpart IIII.
Fugitive dust sources	Water Trucks, Dust Suppressants	A.A.C. R18-2 Article 6 A.A.C. R18-2-702	These standards are applicable to all fugitive dust sources at the facility.
Abrasive Blasting	Wet blasting; Dust collecting equipment; Other approved methods	A.A.C. R-18-2-702 A.A.C. R-18-2-726	These standards are applicable to any abrasive blasting operation.
Spray Painting	Enclosures	A.A.C. R18-2-702 A.A.C. R-18-2-727	These standards are applicable to any spray painting operation.
Demolition/renovation Operations	N/A	A.A.C. R18-2-1101.A.8	This standard is applicable to any asbestos related demolition or renovation operations.

VII. PREVIOUS PERMIT REVISIONS AND CONDITIONS

Table 4 addresses the changes made to the sections and conditions from Permit No. 76597.

Table 4: Previous Permit Conditions

Section No.	Determination			Comments
	Added	Revised	Deleted	
Att. "A"		X		General Provisions: Revised to represent the most recent template language
Att. "B" Section I		X		Facility Wide Requirements: Revised to represent the most recent template language
Att. "B" Section IV	X			Rental Engine Requirements: Added requirements for the rental engine
Att. "B" Section V		X		Fugitive Dust Requirements: Revised to represent the most recent template language
Att. "B" Section VI		X		Other Periodic Activities Requirements: Revised to represent the most recent template language
Att. "C"		X		Equipment List: Revised to reflect the most recent equipment operating at the facility and to include equipment information provided.

VIII. MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

Table 5 contains an inclusive but not an exhaustive list of the monitoring, recordkeeping and reporting requirements prescribed by the air quality permit. The table below is intended to provide insight to the public for how the Permittee is required to demonstrate compliance with the emission limits in the permit. Records are required be kept for a minimum of 5 years as outlined in Section XII of Attachment "A" of the permit.

Table 5: Permit No. 103231

Emission Unit	Pollutant or Standard	Emission Limit or Standard	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Cooper Bessemer Engines (A-01, A-02 & A-03)	NO_X	24.34 lb/hr	Conduct performance testing on a schedule detailed in the permit.	Keep data and test reports for monitoring.	Report test results. Report excess emissions and deviations if applicable.
	CO	30.43 lb/hr	Conduct performance testing on a schedule detailed in the permit.	Keep data and test reports for monitoring.	Report test results. Report excess emissions and deviations if applicable.
	VOC	6.09 lb/hr	Conduct performance testing within one year of permit issuance.	Keep data and test reports for monitoring.	Report test results. Report excess emissions and deviations if applicable.
	PM	10% opacity – for any period greater than 10 seconds	N/A	Maintain records of the lower heating value of the fuel.	Report all 6-minute periods which the opacity exceeded 10%.
	SO_2	1.0 lb/MMBtu	N/A	Record the daily sulfur content of the fuel used in the engines.	Report to the Director any daily period which the sulfur content exceeds 0.8%.

Emission Unit	Pollutant or Standard	Emission Limit or Standard	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Caterpillar Generators (Aux-1 & Aux-2)	NO_X	6.39 lb/hr	Conduct performance testing on a schedule detailed in the permit.	Keep data and test reports for monitoring.	Report test results. Report excess emissions and deviations if applicable.
	CO	9.58 lb/hr	Conduct performance testing on a schedule detailed in the permit.	Keep data and test reports for monitoring.	Report test results. Report excess emissions and deviations if applicable.
	VOC	3.19 lb/hr	Conduct performance testing within one year of permit issuance.	Keep data and test reports for monitoring.	Report test results. Report excess emissions and deviations if applicable.
	PM	10% opacity – for any period greater than 10 seconds	N/A	Maintain records of the lower heating value of the fuel.	Report all 6-minute periods which the opacity exceeded 10%.
	SO_2	1.0 lb/MMBtu	N/A	Record the daily sulfur content of the fuel used in the engines.	Report to the Director any daily period which the sulfur content exceeds 0.8%.
Emergency Generator EG-1	PM	40% opacity – for any period greater than 10 seconds	N/A	Maintain records of the lower heating value of the fuel.	Report all 6-minute periods which the opacity exceeded 40%.

Emission Unit	Pollutant or Standard	Emission Limit or Standard	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
	SO_2	1.0 lb/MMBtu	N/A	Record the daily sulfur content of the fuel used in the engines.	Report to the Director any daily period which the sulfur content exceeds 0.8%.
Fugitive Dust	PM	40% Opacity	N/A	Record of the dates and types of dust control measures employed, and if applicable, the results of any Method 9 observations, and any corrective action taken to lower the opacity of any excess emissions.	Report excess emissions and deviations if applicable.
Abrasive Blasting	PM	20% Opacity	N/A	Record the date, duration and pollution control measures of any abrasive blasting project.	Report excess emissions and deviations if applicable.
Spray Painting	VOC	20% Opacity Control 96% of the overspray	N/A	Maintain records of the date, duration, quantity of paint used, any applicable MSDS, and pollution control measures of any spray painting project.	Report excess emissions and deviations if applicable.

Emission Unit	Pollutant or Standard	Emission Limit or Standard	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Demolition/ Renovation	Asbestos	N/A	N/A	Maintain records of all asbestos related demolition or renovation projects including the "NESHAP Notification for Renovation and Demolition Activities" form and all supporting documents	N/A

IX. COMPLIANCE ASSURANCE MONITORING (CAM)

The CAM rule applies to pollutant-specific emission units (PSEU) at a major Title V source if the unit meets all of the following criteria:

A. The unit is subject to an emission limit or standard for the applicable regulated air pollutant;

B. The unit uses a control device to achieve compliance with the emission limit or standard; and

C. The unit has "potential pre-control device emissions" of the applicable regulated air pollutant equal to or greater than 100% of the amount (tons/year) required for a source to be classified as a major source. "Potential pre-control device emissions" means potential to emit (PTE, as defined in Title V) except emissions reductions achieved by the applicable control device are not taken into account.

The general purpose of monitoring required by the CAM rule is to assure compliance with emission standards by ensuring that control devices meet and maintain the assumed control efficiencies. Compliance is ensured through requiring monitoring of the operation and maintenance of the control equipment and, if applicable, operating conditions of the pollutant-specific emissions unit. For the PSEUs that have post control potential to emit equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source, for each parameter monitored, the facility shall collect four or more data values equally spaced over each hour. Such units are defined as “large” PSEUs. For all other PSEUs (“small” PSEUs), the monitoring shall include some data collection at least once per 24-hour period.

The facility does not use a control device to meet a standard. Consequently, CAM requirements do not apply, and CAM plans are not necessary.

X. LEARNING SITE EVALUTATION

In accordance with ADEQ’s Environmental Permits and Approvals near Learning Sites Policy, the Department is required to conduct an evaluation to determine if any nearby learning sites would be adversely impacted by the facility. Learning sites consist of all existing public schools, charter schools and private schools in the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

This renewal will not result in an increase in emissions and thus, it is exempt from a learning sites evaluation.

XI. ENVIRONMENTAL JUSTICE ANALYSIS

The EPA (Environmental Protection Agency) defines Environmental Justice (EJ) to include the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and polices. The goal of completing an EJ assessment in permitting is to provide an opportunity for overburdened populations or communities to allow for meaningful participation in the permitting process. Overburdened is used to describe the minority, low-income, tribal and indigenous populations or communities that potentially experience disproportionate environmental harms and risks due to exposures or cumulative impacts or greater vulnerability to environmental hazards. The renewal permit does not allow or permit any increases in emissions and will not result in any additional impacts.

XII. LIST OF ABBREVIATIONS

2SLB ..... Two-Stroke, Lean-Burn
4SLB ..... Four-Stroke, Lean-Burn
4SLB ..... Four-Stroke, Rich-Burn
A.A.C. ..... Arizona Administrative Code
ADEQ ..... Arizona Department of Environmental Quality
AQD ..... Air Quality Division
A.R.S. ..... Arizona Revised Statutes
CAM ..... Compliance Assurance Monitoring
CEMS ..... Continuous Emissions Monitoring System
CFR ..... Code of Federal Regulations
CH_4 ..... Methane
CO ..... Carbon Monoxide
CO_2 ..... Carbon Dioxide
CO_2e ..... CO_2 equivalent basis
EPA ..... Environmental Protection Agency
EPNG ..... El Paso Natural Gas Company, LLC
FERC ..... Federal Energy Regulatory Commission
GHG ..... Greenhouse Gases
HAP ..... Hazardous Air Pollutant
hp ..... Horsepower
hr ..... Hour
IC ..... Internal Combustion
kW ..... Kilowatt
MW ..... Megawatts
NO_X ..... Nitrogen Oxides
NO_2 ..... Nitrogen Dioxide
N_2O ..... Nitrous Oxide
NSPS ..... New Source Performance Standards
O_3 ..... Ozone

Pb ..... Lead
PM ..... Particulate Matter
PM_{10} ..... Particulate Matter less than 10 µm nominal aerodynamic diameter
$PM_{2.5}$ ..... Particulate Matter less than 2.5 µm nominal aerodynamic diameter
PTE ..... Potential to Emit
RICE ..... Reciprocating Internal Combustion Engines
SIC ..... Standard Industrial Classification
SO_2 ..... Sulfur Dioxide Significant Impact Levels
TPY ..... Tons per Year
VOC ..... Volatile Organic Compound
yr ..... Year