

**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION**

June 24, 2019

PERMIT TO INSTALL
246-07A

ISSUED TO
DTE Energy

LOCATED AT
3020 East Michigan Avenue
Ypsilanti, Michigan

IN THE COUNTY OF
Washtenaw

STATE REGISTRATION NUMBER
N7421

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: April 2, 2019	
DATE PERMIT TO INSTALL APPROVED: June 24, 2019	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

Table of Contents

COMMON ACRONYMS 2
POLLUTANT / MEASUREMENT ABBREVIATIONS..... 3
GENERAL CONDITIONS 4
EMISSION UNIT SPECIAL CONDITIONS..... 6
 EMISSION UNIT SUMMARY TABLE 6
 EUENGINE1 7
FLEXIBLE GROUP SPECIAL CONDITIONS..... 10
 FLEXIBLE GROUP SUMMARY TABLE 10
 FGENGMACT4Z..... 11
APPENDIX A..... 16

COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department	Michigan Department of Environmental Quality
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MDEQ	Michigan Department of Environmental Quality
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig

POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO ₂ e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H ₂ S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO _x	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM ₁₀	Particulate Matter equal to or less than 10 microns in diameter
PM _{2.5}	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO ₂	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.
11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity;
 - b) A visible emission limit specified by an applicable federal new source performance standard; and,
 - c) A visible emission limit specified as a condition of this Permit to Install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Flexible Group ID
EUENGINE1	A 4,735 hp natural gas fired reciprocating engine with catalytic oxidation system, subject to 40 CFR Part 63 Subpart ZZZZ, and 40 CFR Part 60 Subpart JJJJ.	FGENGMACT4Z

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

**EUENGINE1
EMISSION UNIT CONDITIONS**

DESCRIPTION A 4,735 hp natural gas fired reciprocating engine with catalytic oxidation system, subject to 40 CFR Part 63 Subpart ZZZZ, and 40 CFR Part 60 Subpart JJJJ.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Catalytic oxidation system

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. NO _x	41.2tpy	12-month rolling time period as determined at the end of each calendar month.	EUENGINE1	SC.II.1, SC.VI.3, and Appendix A	R 336.1205(3),
2. NO _x	9.4 lb/hr* (0.9 g/Bhp-hr)	Hourly	EUENGINE1	SC.IV.2	40 CFR 52.21(c) & (d), R 336.2803, R 336.2804,
3. NO _x	2.0 g/Bhp hr*	Hourly	EUENGINE1	SC.IV.2	40 CFR 60.4233 (e)
4. CO	34.3 tpy	12-month rolling time period as determined at the end of each calendar month.	EUENGINE1	SC.II.1, SC.VI.3, and Appendix A	R 336.1205(3)
5. CO	7.8 lb/hr* (2.5 g/Bhp-hr)	Hourly	EUENGINE1	SC.V.1	40 CFR 52.21(d) , R 336.2803, R 336.2804,
6. CO	4.0 g/Bhp hr*	Hourly	EUENGINE1	SC.V.1	40 CFR 60.4233 (e)
7. VOC (including formaldehyde)	22.9tpy	12-month rolling time period as determined at the end of each calendar month.	EUENGINE1	SC.II.1, SC.VI.3, and Appendix A	R 336.1205(3)
8. VOC	1.0 g/Bhp hr*	Hourly	EUENGINE1	SC.V.1	40 CFR 60.4233(e)

* All limits are applicable at 100 percent speed, and 100 percent load operating conditions.

II. MATERIAL LIMIT(S)

1. The natural gas usage for EUENGINE1 shall not exceed 292,900,000 cubic feet per year based on a 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate any engine equipped with an add-on control device for more than 200 hours per engine without that control device consistent with the Startup, Shutdown, Malfunction Plan (SSM). The 200 hours shall include times such as after an engine change-out occurs and general maintenance performed as allowed by the SSM. **(R 336.1205, R 336.1702(a), R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**

2. The permittee shall not operate any engine that contains an add-on control device unless that device is installed, maintained, and operated in a satisfactory manner, except as specified in SC.III.1. Satisfactory operation includes performing the manufacturer's recommended maintenance on the control device and operating in conjunction with the SSM plan specified in SC.III.1. **(R 336.1205, R 336.1702(a), R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall maintain and operate EUENGINE1 and control devices in accordance with the manufacturers written instructions or procedures developed by the permittee. **(40 CFR 60.4243(a))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall verify NOx, CO, and VOC emission rates from EUENGINE1, as required by federal Standards of Performance for New Stationary Sources, by testing at owner's expense, in accordance with 40 CFR Part 60 Subparts A and JJJJ. Stack testing procedures and the location of stack testing ports shall be in accordance with the applicable federal Reference Methods, 40 CFR Part 60 Appendix A. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. The permittee shall conduct subsequent performance testing every 8,760 hours or every three years to demonstrate compliance for NOx, CO, and VOC. **(40 CFR 60.4243(b)(2)(ii), 40 CFR 60.4245(d), R 336.1205, R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the 30th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1205, R 336.1702(a), R 336.1901)**
2. The permittee shall monitor, in a satisfactory manner, the natural gas usage for EUENGINE1 on a continuous basis. **(R 336.1205, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**
3. The permittee shall maintain the annual emission estimates of CO, NOx, and VOC's for a period of at least five years (unless otherwise noted above), be kept in a format acceptable to the Air Quality Division and shall be made available to the Air Quality Division upon request. **(40 CFR 60.4243(b))**
4. The permittee shall maintain records of all maintenance activities conducted according to the SSM. The permittee shall keep these records on file at the facility for a period of at least five years and make them available to the Department upon request. **(R 336.1205, R 336.1702(a), R 336.1911, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**
5. The permittee shall keep, in a satisfactory manner, for any engine equipped with an add-on control device, monthly and 12-month rolling time period records of the hours that the engine is operated without the control device. The permittee shall keep all records on file at the facility for a period of at least five years and make them available to the Department upon request. **(R 336.1205, R 336.1702(a), R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**
6. The permittee shall keep, in a satisfactory manner, monthly fuel use records for EUENGINE1, as required by SC.IV.2. The permittee shall keep all records on file at the facility for a period of at least five years and make them available to the Department upon request. **(R 336.1205, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

7. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period NO_x, CO, and VOC emission calculation records for EUENGINE1, as required by special conditions SC.I.1, SC.I.4, SC.I.7 and Appendix A. The permittee shall keep all records on file at the facility for a period of at least five years and make them available to the Department upon request. **(R 336.1205, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**
8. The permittee shall keep records of the following information for a non-certified engine:
- a) All notifications submitted to comply with 40 CFR Part 60 Subpart JJJJ and all documentation supporting any notification;
 - b) Maintenance conducted on the engine; and,
 - c) Documentation that the engine meets the emission standards stated in SC.I.3, SC.I.6, and SC.I.8.
- (40 CFR 60.4245(a))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVENGINE1	32	63	R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d)

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the New Source Performance Standards, as specified in 40 CFR Part 60, Subpart A and Subpart JJJJ for Stationary Compression Ignition Internal Combustion Engines. **(40 CFR Part 60, Subpart A and JJJJ, 40 CFR 60.4230)**

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FLEXIBLE GROUP SPECIAL CONDITIONS

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGENGMACT4Z	New spark ignition RICE located at a Major Source of HAPs greater than 500 HP, non-emergency.	EUENGINE1

**FGENGMACT4Z
 FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

New spark ignition RICE located at a Major Source of HAPs greater than 500 HP, non-emergency.

Emission Unit: EUENGINE1

POLLUTION CONTROL EQUIPMENT

Catalytic oxidation system

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1a. CO	≥93% reduction (limit applies to each engine)	Hourly, excluding periods of startup and shutdown	Each engine in FGENGMACT4Z	SC V.1	40 CFR 63.6600(b) Table 2a
-OR-					
1b. Formaldehyde	≤14 ppmvd at 15% O ₂ (limit applies to each engine)	Hourly, excluding periods of startup and shutdown	Each engine in FGENGMACT4Z	SC V.1	40 CFR 63.6600(b) Table 2a

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate any engine of FGENGMACT4Z unless the catalytic oxidation system is installed, maintained, and operated in a satisfactory manner, except as allowed in SC.III.5. Satisfactory manner includes the following:
 - a) Maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load +/- 10 percent from the pressure drop across the catalysts that was measured during the initial performance test; and,
 - b) Maintain the temperature of the exhaust for the catalyst inlet temperature is greater than or equal to 450°F and less than or equal to 1350°F.
(40 CFR 63.6600 (b), Table 2b of 40 CFR Part 63, Subpart ZZZZ)
2. The permittee shall operate each engine of FGENGMACT4Z in compliance with the emission limitations and operating limitations. Each engine of FGENGMACT4Z, including associated air pollution control equipment and monitoring equipment, must be operated and maintained, in a manner consistent with safety and good air pollution control practices for minimizing emissions. **(40 CFR 63.6605)**
3. The permittee shall minimize the time spent at idle during startup and minimize the startup time of each engine of FGENGMACT4Z to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission limits in SC.I.1 apply. **(40 CFR 63.6625(h))**

4. The permittee must reestablish the values of the operating parameters measured during the initial performance test when a catalyst is changed for any engine of FGENGMACT4Z. When the operating parameters are reestablished, the permittee must also conduct a performance test to demonstrate compliance with the emission limits in SC I.1. **(40 CFR 63.6640(b))**
5. For new, reconstructed and rebuilt RICE, deviation from the emissions or operating limitations that occur during the first 200 hours of operation from engine startup (engine burn in period) are not violations. **(40 CFR 63.6640(d))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain each engine of FGENGMACT4Z with a catalytic oxidation system. **(40 CFR 63.6600 (b), Table 2b)**
2. The permittee shall install, calibrate, operate, and maintain each Continuous Parameter Monitoring System (CPMS) (thermocouple), in continuous operation according to the procedures in a site-specific monitoring plan. The CPMS (thermocouple) must collect data at least once every 15 minutes when the associated engine of FGENGMACT4Z is operating. **(40 CFR Part 63.6625(b))**
3. For a CPMS measuring temperature range, the temperature sensor must have a minimum tolerance of 2.8°F or 1 percent of the measured range whichever is larger. **(40 CFR Part 63.6625(b))**
4. The CPMS (thermocouple) must be verified according to the site-specific monitoring plan annually (calendar year). **(40 CFR Part 63.6625(b)(5))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall verify the formaldehyde emission rates, from each engine included in FGENGMACT4Z, or verify the catalytic system efficiency by utilizing CO emission rates as a surrogate, from each engine included in FGENGMACT4Z, by testing at owner's expense, in accordance with Department requirements. Testing must be conducted at 100 percent speed and load ± 10 percent. Subsequent testing shall be conducted semiannually, until two consecutive semiannual passing events have been demonstrated. After two consecutive passing events, subsequent testing can be changed to annually. If the annual test failed, revert to semiannual testing until two consecutive passing events. The annual test fails if the results do not comply with the CO or formaldehyde emission limitation or deviate from any operating limitations (such as temperature or pressure) during a test. No less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(40 CFR 63.6610(a), 40 CFR 63.6615, 40 CFR 63.6620(b), 40 CFR 63.6630, 40 CFR 63.6645(g) and (h))**
2. If any engine in FGENGMACT4Z subject to performance testing is not operating, the engine does not need to be started solely to conduct the performance test. The performance test can be conducted when the engine is started up again. **(40CFR 63.6620(b))**
3. If a catalyst is changed for any engine in FGENGMACT4Z the permittee shall conduct a performance test on that specific engine to demonstrate the emission limits are being met. **(40 CFR 63.6640(b))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall continuously monitor, at least once every 15 minutes, the catalyst inlet temperature at all times that any engine for FGNGMACT4Z is operating except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. This monitoring data shall be kept on file at the facility and made available to the Department upon request. **(40 CFR 63.6625(b)(3), 40 CFR 63.6635(b), 63.6660, Table 6 of 40 CFR 63 Subpart ZZZZ)**
2. The permittee shall not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. The permittee must, however, use all the valid data collected during all other periods. **(40 CFR 63.6635(c))**
3. The permittee shall keep the following records for each engine in FGNGMACT4Z:
 - a) Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or of the air pollution control and monitoring equipment;
 - b) Records of catalyst efficiency performance tests and performance evaluations;
 - c) Records of all required maintenance performed on the air pollution control and monitoring equipment; and,
 - d) Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

These records shall be kept on file at the facility and made available to the Department upon request **(40 CFR 63.6655(a))**

4. The permittee shall maintain the following records for each Continuous Monitoring System (CMS) (thermocouple):
 - a) Each period during which the CMS (thermocouple) malfunctioned or was inoperative (including out-of-control periods);
 - b) The catalyst inlet temperature measurements, including raw data and 4 hour rolling average;
 - c) Thermocouple calibration checks; and,
 - d) Adjustments and maintenance performed on CMS.

These records shall be kept on file at the facility and made available to the Department upon request **(40 CFR 63.6655(b))**

5. The permittee shall maintain the following records to demonstrate continuous compliance with the emission limits in SC I.1.:
 - a) Catalyst inlet temperature data reduced to 4-hour rolling averages; and
 - b) Pressure drop across the catalyst measured monthly.

These records shall be kept on file at the facility and made available to the Department upon request. **(40 CFR 63.6660, 40 CFR 63.6655(d), Table 6 of 40 CFR Part 63, Subpart ZZZZ)**

VII. REPORTING

1. A written stack test report of the average percent load determined during a performance test must be included in the notification of compliance status. The following information must be included in the written report:
 - a) The engine model number;
 - b) The engine manufacturer;
 - c) The year of purchase;
 - d) The manufacturer's site-rated brake horsepower;
 - e) The ambient temperature, pressure, and humidity during the performance test; and,

- f) The calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. All assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.

(40 CFR 63.6620(i))

2. The permittee shall report each instance in which they did not meet each emission limitation in SC I.1 or operating limitation in SC III.1, except as allowed in SC III.5. These instances are deviations from the emission and operating limitations in 40 CFR Part 63 Subpart ZZZZ. These deviations must be reported according to the requirements in §63.6650 in the semi-annual compliance report during the period in which they occurred. Deviations that occur during the first 200 hours of operation from initial startup of any engine of FGENGMACT4Z are not violations. **(40 CFR 63.6640(b) & (d))**
3. Each Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. **(40 CFR 63.6650(b), Table 7 of 40 CFR 63 Subpart ZZZZ)**
4. The permittee shall include the following information in each Compliance report:
- a) Company name and address.
 - b) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.
 - c) Date of report and beginning and ending dates of the reporting period.
 - d) If a malfunction occurred during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken during a malfunction of an affected source to minimize emissions in accordance with §63.6605(b), including actions taken to correct a malfunction.
 - e) If there are no deviations from any emission or operating limitations, a statement that there were no deviations from the emission or operating limitations during the reporting period.
 - f) If there were no periods during which the CMS was out-of-control, as specified in §63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.
 - g) If there was a deviation from an emission or operating limitation, the following information must be included.
 - i. The date and time that each malfunction started and stopped.
 - ii. The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.
 - iii. The date, time, and duration that each CMS was out-of-control, including the information required in the excess emissions and continuous monitoring system performance report.
 - iv. The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.
 - v. A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.
 - vi. A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.
 - vii. A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.
 - viii. An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE.
 - ix. A brief description of the stationary RICE.
 - x. A brief description of the CMS.
 - xi. The date of the latest CMS certification or audit.
 - xii. A description of any changes in CMS, processes, or controls since the last reporting period.

(40 CFR 63.6650(c) & (e), 40 CFR 63.8(c)(8), 40 CFR 63.10(e)(3))

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subpart A and Subpart ZZZZ, as they apply to any engine included in FGENGMACT4Z. **(40 CFR 63.6595, 40 CFR Part 63, Subparts A and ZZZZ)**

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

APPENDIX A
Procedures for Calculating NO_x, CO, VOC Emissions

The permittee shall demonstrate compliance with the NO_x, VOC and CO emission limits by keeping track of all fuel usage for all equipment using such fuel at this facility and multiplying that fuel usage by an equipment-specific emission factor. The emission factors are typically expressed as the mass of pollutant per unit of fuel.

The permittee shall use emission factors from vendor data or from source specific testing (stack testing), as available for EUENGINE1. This also applies to engine(s) from engine change-out(s). If emission factors from other sources are used, the permittee shall obtain the approval of the AQD District Supervisor before using the emission factors to calculate emissions.

The permittee shall document the source of each emission factor used in the calculations.