PERMIT TO INSTALL

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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/EGLE	Michigan Department of Environment, Great Lakes, and Energy
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
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_2e	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_2S	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
PM10	Particulate Matter equal to or less than 10 microns in diameter
PM2.5	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 Environment, Great Lakes, and Energy, 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 Environment, Great Lakes, and Energy. **(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.
    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))	Installation Date / Modification Date	Flexible Group ID
EUGT1A	Natural gas-fired turbine with dry low-NO_x combustors. Turbine contains an advanced gas path (AGP) and axial fuel staging (AFS) upgrade to improve electrical output and efficiency.	03-10-2001 / TDB	FGSIMPLECYCLE
EUGT1B	Natural gas-fired turbine with dry low-NO_x combustors. Turbine contains an advanced gas path (AGP) and axial fuel staging (AFS) upgrade to improve electrical output and efficiency.	03-15-2001 / TBD	FGSIMPLECYCLE

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.

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
FGSIMPLECYCLE	Two (2) General Electric model 7FA natural-gas-fired combustion turbines operating in simple cycle mode. Both turbines have dry low-NO_x burners and installation of advanced gas path (AGP) and axial fuel staging (AFS) upgrades to improve electrical output and efficiency.	EUGT1A EUGT1B

FGSIMPLECYCLE
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Two (2) General Electric model 7FA natural-gas-fired combustion turbines operating in simple cycle mode.

Emission Unit: EUGT1A, EUGT1B

POLLUTION CONTROL EQUIPMENT

Dry low-NO_x combustors; integral to the firing process. As such, they are not considered to be control equipment with respect to Compliance Assurance Monitoring (CAM). Each turbine contains an advanced gas path (AGP) and axial fuel staging (AFS) upgrade to each turbine to improve electrical output and efficiency.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. NO_x	0.04 lb/MMBTU [A]	Average of all operating hours in a calendar day	EUGT1A EUGT1B (each individual turbine)	SC IV.2 SC VI.4 SC VI.7 (CEMS)	R 336.1205(1) (a) & (b), R 336.2810
2. NO_x	9.0 ppmv, at 15% oxygen, dry [A] (This is equivalent to 0.04 lb/MMBTU)	Average of all operating hours in a calendar day	EUGT1A EUGT1B (each individual turbine)	SC IV.2 SC VI.4 SC VI.7 (CEMS)	R 336.1205(1) (a) & (b) 40 CFR 60, Subpart GG, [B, C] R 336.2810
3. NO_x	67.1 pph [A, D]	Average of all operating hours in a calendar day	EUGT1A EUGT1B (each individual turbine)	SC IV.2 SC VI.4 SC VI.9 (CEMS)	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
4. NO_x	15 ppm at 15% O_2 [D, E]	Hourly as determined on a 4-hour rolling average	EUGT1A EUGT1B (each individual turbine)	SC IV.2 SC VI.4 SC VI.9 (CEMS)	40 CFR 60.4320(a) [D], Table 1 of 40 CFR Part 60 Subpart KKKK [D]
5. NO_x	334.6 tpy	12-month rolling time period, determined at the end of each calendar month	EUGT1A EUGT1B (each individual turbine)	SC IV.2 SC VI.2 SC VI.4 SC VI.7 SC VI.9 (CEMS)	R 336.1205(1)(a) & (b), R 336.2810

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
6. PM10	10.8 pph [A]	Average of all operating hours in a calendar day	EUGT1A EUGT1B (each individual turbine)	SC V.2 SC VI.2 SC VI.9 (Stack test results in combination with records of heat input)	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
7. PM10	0.007 lb/MMBtu [A, D]	Average of 3 tests runs (HHV)	EUGT1A EUGT1B (each individual turbine)	SC V.2	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804
8. PM10	47.3 tpy	12-month rolling time period, determined at the end of each calendar month	EUGT1A EUGT1B (each individual turbine)	SC V.2 SC VI.1 SC VI.7 SC VI.9 (Stack test results in combination with records of heat input)	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
9. PM2.5	10.8 pph [A]	Average of all operating hours in a calendar day	EUGT1A EUGT1B (each individual turbine)	SC V.2 SC VI.2 SC VI.9 (Stack test results in combination with records of heat input)	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
10. PM2.5	0.007 lb/MMBtu [A, D]	Average of 3 tests runs (HHV)	EUGT1A EUGT1B (each individual turbine)	SC V.2	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804
11. PM2.5	47.3 tpy	12-month rolling time period, determined at the end of each calendar month	EUGT1A EUGT1B (each individual turbine)	SC V.2 SC VI.1 SC VI.7 SC VI.9 (Stack test results in combination with records of heat input)	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
12. CO	0.021 lb/MMBTU [A]	Average of all operating hours in a calendar day	EUGT1A EUGT1B (each individual turbine)	SC IV.3 SC VI.5 SC VI.9 (CEMS)	R 336.1205(1) (a) & (b), 40 CFR 52.21(j)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
13. CO	175.6 tpy	12-month rolling time period, determined at the end of each calendar month	EUGT1A EUGT1B (each individual turbine)	SC VI.1 SC VI.2 SC VI.5 SC VI.7 SC VI.9 (CEMS)	R 336.1205(1) (a) & (b), 40 CFR 52.21(j)
14. VOC	5.8 pph [A]	Average of all operating hours in a calendar day	EUGT1A EUGT1B (each individual turbine)	SC V.2 SC VI.1 SC VI.9 (Stack test results in combination with records of heat input)	R 336.1205(1) (a) & (b), R 336.1702(a), 40 CFR 52.21(j)
15. VOC	25.4 tpy	12-month rolling time period, determined at the end of each calendar month	EUGT1A EUGT1B (each individual turbine)	SC V.2 SC VI.1 SC VI.7 SC VI.9 (Stack test results in combination with records of heat input)	R 336.1205(1) (a) & (b), R 336.1702(a), 40 CFR 52.21(j)
16. SO_2	0.060 lb/MMBtu heat input [D]	Hourly	EUGT1A EUGT1B (each individual turbine)	SC VI.9	40 CFR 60.4330(a)(2), 40 CFR 60.4365(a)
17. Formaldehyde (CAS no. 50-00-0)	9.4 tpy	12-month rolling time period, determined at the end of each calendar month	FGSIMPLECYCLE FG-COMBINEDCYCLE (all combustion turbine operations)	SC V.2 SC VI.1 SC VI.2 SC VI.7 SC VI.9 (Stack test results in combination with records of heat input)	R 336.1205(2), R 336.1224, R 336.1225
18. Opacity	10%	6-minute average	EUGT1A EUGT1B (each individual turbine)	SC V.1 SC VI.8 (Visible emissions evaluations per Federal Reference Method 9)	40 CFR 52.21, R 336.1301

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
19. CO_2e	120 lb CO_2e/MMBtu heat input [D]	Hourly	EUGT1A EUGT1B (each individual turbine)	SC II.2	R 336.1205(1)(a) & (b), R 336.2810
20. CO_2e	1,065,435 tpy [D]	12-month rolling time period, determined at the end of each calendar month	EUGT1A EUGT1B (each individual turbine)	SC VI.2 SC VI.7 SC VI.9 Appendix B	R 336.1205(1)(a) & (b), R 336.2810, 40 CFR 52.21(j)

ppmvd = parts per million by volume at 15 percent oxygen and on a dry gas basis.

[A] Does not include startup and shutdown. Startup is defined as the period of time from first ignition to when the turbine reaches full DLN combustion mode. Shutdown is defined as the period of time the turbine output is lowered below full DLN combustion mode, with the intent to shut down, until the point at which the combustion process stops.

[B] In accordance with Rule 213(2) and Rule 213(6), compliance with this streamlined NO_x limit shall be considered compliance with the NO_x limit established by 40 CFR 60.332(a)(1).

[C] This limit or underlying applicable requirement applies until the AGP/AFS is installed and operating.

[D] This limit or underlying applicable requirement applies once the AGP/AFS is installed and operating.

[E] Table 1 of 40 CFR Part 60 Subpart KKKK also allows 96 ppm at 15 percent O_2 when the turbines are operating at less than 75 percent of peak load, or when operating at temperatures less than 0°F.

II. MATERIAL LIMIT(S)

1. Only pipeline quality natural gas shall be fired in each turbine within FGSIMPLECYCLE. Pipeline quality natural gas is defined as 0.0006 lb/MMBTU sulfur content, which is equivalent to 0.2 grains total sulfur per 100 scf, 6.8 ppm by weight total sulfur or 3.4 ppm by volume total sulfur. **(R 336.1205(1)(a) & (b), R 336.1702, R 336.2810, 40 CFR 52.21(j), 40 CF 60.4415(a)(1))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate any unit in FGSIMPLECYCLE unless a MAP as described in Rule 911(2) is implemented and maintained. The MAP shall, at a minimum, specify the following:
   a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
   b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
   c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 60 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1911)**

2. The permittee shall operate and maintain FGSIMPLECYCLE monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including startup, shutdown, and malfunction. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, R 336.2810, 40 CFR 60.4333(a))**

3. The permittee shall not operate either turbine in FGSIMPLECYCLE unless the AQD District Supervisor has approved a plan that describes how emissions will be minimized during startup and shutdown. The permittee shall submit, implement, and maintain a revised plan within 180 days after trial operation of the AGP/AFS on each turbine. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. Unless notified by the AQD District Supervisor within 30 business days after plan submittal, the plan shall be deemed approved. **(R 336.1911, R 336.1912, 40 CFR 60.4333(a))**

4. The permittee shall not exceed annual hours of operation for each of the following conditions, based on a 12-month rolling time period for each turbine: Startup (182 hours) and Shutdown (85 hours). **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain each turbine in FGSIMPLECYCLE with a dry low-NO_x combustor system. **(R 336.1205(1)(a) & (b), R 336.1205(2), R 336.1910, 40 CFR 52.21(j))**

2. The permittee shall install, calibrate, maintain and operate, in a satisfactory manner, devices to monitor and record the NO_x and either oxygen (O_2), or carbon dioxide (CO_2) content of the exhaust gas from each turbine in FGSIMPLECYCLE on a continuous basis. The permittee shall install and operate the Continuous Emission Monitoring System (CEMS) to meet the timelines, requirements and reporting detailed in Appendix A. **((R 336.1205(1), 40 CFR 52.21(j), 40 CFR Part 75, 40 CFR 60.4340(b)(1), 40 CFR 60.4345)**

3. The permittee shall install, calibrate, maintain and operate, in a satisfactory manner, devices to monitor and record the CO emissions of the exhaust gas from each turbine in FGSIMPLECYCLE on a continuous basis. The permittee shall install and operate the CEMS to meet the timelines, requirements and reporting detailed in Appendix A. **(R 336.1205(1)(a) & (b), R 336.2804, R 336.2810)**

V. TESTING/SAMPLING

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

1. Compliance with the visible emissions (opacity) limit shall be determined at least once per 1,624 hours of operation for each turbine or annually, whichever is least restrictive, using Federal Reference Method 9 (40 CFR Part 60, Appendix A) during maximum routine operating conditions. **(R 336.1301, 40 CFR 52.21)**

2. Within 180 days after commencement of initial startup of the AGP/AFS on each turbine and periodically thereafter as required by Special Condition V.3, the permittee shall verify PM10, PM2.5, VOC, and formaldehyde emission rates from each turbine within FGSIMPLECYCLE by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM10 / PM2.5	40 CFR Part 51, Appendix M
VOCs	40 CFR Part 60, Appendix A
Formaldehyde	40 CFR Part 63, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test

results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205(1)(a) & (b), R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, R 336.2810)**

3. The permittee shall verify the VOC, PM10, PM2.5 and formaldehyde emission rates from FGSIMPLECYCLE at a minimum, every five years from the date of the last test, not to exceed 64 months between adjacent tests. Upon written approval of the AQD District Supervisor or Technical Programs Unit Supervisor, subsequent testing may be conducted for a single unit of FGSIMPLECYCLE as a representative unit. The permittee shall not test the same representative unit in adjacent subsequent tests unless approved or requested by the AQD District Supervisor or Technical Programs Unit Supervisor. Testing must be completed at 70% and 100% of base load for the tested unit(s). **(R 336.1205(1)(a) & (b), R 336.2001, R 336.2003, R 336.2004)**

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 by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j), 40 CFR 60.4345)**

2. The permittee shall monitor and record the heat input, in MMBTU, for each turbine in FGSIMPLECYCLE on a continuous basis. **(R 336.1205(2). R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21)**

3. The permittee shall maintain a written or electronic log of hours of startup and shutdown for each turbine in FGSIMPLECYCLE. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810)**

4. The permittee shall continuously monitor and record, in a satisfactory manner, the NO_x emissions, and the O_2 or CO_2 concentrations from each turbine in FGSIMPLECYCLE. The permittee shall operate each CEMS to meet the timelines, requirements and reporting detailed in Appendix A and shall use the CEMS data for determining compliance with SC I.1, SC I.2, SC I.3, SC I.4, and SC I.5.. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 60.334, 40 CFR Part 60 Subpart GG, 40 CFR 60.4345, 40 CFR 60.4320(a), Table 1 of 40 CFR Part 60 Subpart KKKK)**

5. The permittee shall continuously monitor and record, in a satisfactory manner, the CO emissions from each turbine in FGSIMPLECYCLE. The permittee shall operate each CEMS to meet the timelines, requirements and reporting detailed in Appendix A and shall use the CEMS data for determining compliance with SC I.12, and SC I.13. **(R 336.1205(1)(a) & (b), R 336.2804, R 336.2810)**

6. The permittee shall monitor the sulfur content of natural gas combusted in accordance with 40 CFR 60.334(h) or as described in the "Custom Fuel Monitoring Program" until AGP/AFS is installed and operating. Thereafter, the sulfur content of natural gas shall be monitored in accordance with 40 CFR 60.4360 and 60.4370, unless exempted from fuel sulfur content monitoring in accordance with 40 CFR 60.4365. **(40 CFR 60.334, 40 CFR 60.4360, 40 CFR 60.4370))**

7. The permittee shall keep, in a satisfactory manner, records of daily, monthly and 12-month rolling NO_x, CO, PM10, PM2.5, VOC, Formaldehyde, and CO_2e emission records for each turbine in FGSIMPLECYCLE, as required by SC I.5. SC I.8, SC I.11, SC I.13, SC I.15, SC I.17, and SC I.19. The CO_2e calculations shall be performed as specified in Appendix B. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j))**

8. The permittee shall keep, in a satisfactory manner, records of the visible emission readings for each turbine in FGSIMPLECYCLE. **(R 336.1301, 40 CFR 52.21(j))**

9. The permittee shall maintain records of all information necessary for all notifications and reports as specified in these special conditions as well as that information necessary to demonstrate compliance with the emission limits of this permit. This information shall include, but shall not be limited to the following:

a) Compliance tests and any testing required under the special conditions of this permit;
b) Monitoring data;
c) Total sulfur content of the natural gas as required by 40 CFR 60.334(h) or 40 CFR 60.4360;
d) The amounts of natural gas combusted in each turbine within FGSIMPLECYCLE on a calendar month or more frequent basis;
e) All records required by 40 CFR 60.7;
f) Records of the duration of all times each turbine within FGSIMPLECYCLE are operated under startup or shutdown conditions as defined in Section I, Footnote A;
g) All calculations necessary to show compliance with the limits contained in this permit.

All of the above information shall be stored in a format acceptable to the Air Quality Division and shall be consistent with the requirements of 40 CFR 60.7(f). **(R 336.1205(1)(a), R 336.1224, R 336.1225, R 336.1301, R 336.1702(a), R 336.1912, R 336.2802(4), R 336.2803, R 336.2804, R 336.2810, 40 CFR 60.7(f), 40 CFR 60.334, 40 CFR Part 60 Subpart GG, 40 CFR 60.4345, 40 CFR 60.4360, 40 CFR Part 60 Subpart KKKK)**

VII. REPORTING

1. The permittee shall provide written notification of construction and operation to comply with the federal Standards of Performance for New Stationary Sources, 40 CFR 60.7. The permittee shall submit this notification to the AQD District Supervisor within the time frames specified in 40 CFR 60.7. **(40 CFR 60.7)**

2. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of the AFS/AGS on each turbine within FGSIMPLECYCLE. **(R 336.1201(7)(a))**

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. SVGT1A	210	105	R 336.1225, R 336.2803, R 336.2804
2. SVGT1B	210	105	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and GG until the AFS/AGS are installed and operating, as they apply to each turbine in FGSIMPLECYCLE. **(40 CFR Part 60 Subparts A & GG)**

2. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and KKKK after the AFS/AGS are installed and operating, as they apply to each turbine in FGSIMPLECYCLE. **(40 CFR Part 60 Subparts A & KKKK)**

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

Appendix A. Monitoring Requirements

The following monitoring procedures, methods, or specifications are the details to the monitoring requirements identified and referenced in FGSIMPLECYCLE.

Continuous Emission Monitoring System (CEMS) Requirements

1. The CEMS shall comply with the requirements of the corresponding Performance Specifications (PS) in the following table:

Pollutant	Applicable PS*
NO_x	2
CO	4/4A
CO_2/O_2	3
*Or other PS as approved by the AQD.	

2. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.

3. The CEMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and PS 2, 3, and 4/4A (see No. 1 above) of Appendix B to 40 CFR Part 60 or 40 CFR Part 75, Appendices A and B, as applicable.

4. Each calendar quarter, the permittee shall perform the Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR Part 60 or 40 CFR Part 75, Appendix B. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD in the format of the data assessment report (Figure 1, Appendix F of 40 CFR Part 60).

5. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to the AQD, within 30 days following the end of each calendar quarter. The summary report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:
   a) A report of each exceedance above the limits specified in the Emission Limits of this permit. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.
   b) A report of all periods of CEMS downtime and corrective action.
   c) A report of the total operating time of each emission unit during the reporting period.
   d) A report of any periods that the CEMS exceeds the instrument range.
   e) If no exceedances or CEMS downtime occurred during the reporting period, the permittee shall report that fact.

6. The permittee shall keep all monitoring data on file for a period of at least five years and make them available to the AQD upon request.

Appendix B. Emission Calculations

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FGSIMPLECYCLE.

CO_2e Emission Calculations

If not utilizing a CO_2 CEMS:

$$CO_2 \text{ emissions rate (tons/hr)} = \frac{F_c \times H \times U_f \times MW_{CO2}}{2000}$$ [40 CFR Part 75, Appendix G, Equation G-4]

Where:

F_c	=	Carbon based F-factor, 1040 scf/mmBtu for natural gas
H	=	Hourly heat input in mmBtu, as calculated using the procedures in Section 5 of 40 CFR Part 75, Appendix F
U_f	=	1/385 scf CO_2/lb-mole at 14.7 psia and 68 degrees F
MW_{CO2}	=	Molecular weight of carbon dioxide, 44.0 lb/lb-mole
2000	=	Conversion factor from pounds to tons

$$CO_2e \text{ emissions rate (tons/hr)} = CO_2 \text{ emissions rate } \left(\frac{\text{tons}}{\text{hr}}\right) + \frac{\left[\left(H \times CH_4 \text{ EF } \left(\frac{\text{kg}}{\text{mmBtu}}\right) \times CH_4 \text{ GWP}\right) + \left(H \times N_2O \text{ EF } \left(\frac{\text{kg}}{\text{mmBtu}}\right) \times N_2O \text{ GWP}\right)\right] \times 2.20462}{2000}$$

Where:

H	=	Hourly heat input in mmBtu, as calculated using the procedures in Section 5 of 40 CFR Part 75, Appendix F
CH_4 EF	=	1.0×10^{-03} kg/mmBtu; emission factor from 40 CFR Part 98, Subpart C, Table C-2 (December 9, 2016)
CH_4 GWP	=	28; global warming potential from 40 CFR Part 98, Subpart A, Table A-1 (April 25, 2024)
N_2O EF	=	1.0×10^{-04} kg/mmBtu; emission factor from 40 CFR Part 98, Subpart C, Table C-2 (December 9, 2016)
N_2O GWP	=	265; global warming potential from 40 CFR Part 98, Subpart A, Table A-1 (April 25, 2024)
2.20462	=	Conversion factor from kg to lbs
2000	=	Conversion factor from pounds to tons

$$CO_2e \text{ emissions (tons/month)} = \sum_{h=1}^{p} CO_2e \text{ emission rate (tons/hr)} \times t_h$$

Where:

p	=	Number of hours in each calendar month
t_h	=	Unit operating time for hour h