

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

August 12, 2015

**PERMIT TO INSTALL
72-15**

ISSUED TO
Dearborn Industrial Generation, L.L.C.

LOCATED AT
2400 Miller Road
Dearborn, Michigan

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
N6631

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. 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: May 15, 2015	
DATE PERMIT TO INSTALL APPROVED: August 12, 2015	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

Table of Contents

Section	Page
Alphabetical Listing of Common Abbreviations / Acronyms	2
General Conditions	3
Special Conditions	5
Emission Unit Summary Table.....	5
Special Conditions for EUCTG1	6
Special Conditions for EUCTG2	9
Special Conditions for EUCTG3	12
Flexible Group Summary Table	15
Special Conditions for FGTURBINES.....	16
Special Conditions for FGNSPSKKKK.....	18

Common Abbreviations / Acronyms

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	BTU	British Thermal Unit
BACT	Best Available Control Technology	°C	Degrees Celsius
CAA	Clean Air Act	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
CO ₂ e	Carbon Dioxide Equivalent	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H ₂ S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
GHGs	Greenhouse Gases	kW	Kilowatt
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	NO _x	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality (Department)	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM10	PM with aerodynamic diameter ≤10 microns
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM2.5	PM with aerodynamic diameter ≤ 2.5 microns
NSPS	New Source Performance Standards	pph	Pounds per hour
NSR	New Source Review	ppm	Parts per million
PS	Performance Specification	ppmv	Parts per million by volume
PSD	Prevention of Significant Deterioration	ppmw	Parts per million by weight
PTE	Permanent Total Enclosure	psia	Pounds per square inch absolute
PTI	Permit to Install	psig	Pounds per square inch gauge
RACT	Reasonably Available Control Technology	scf	Standard cubic feet
ROP	Renewable Operating Permit	sec	Seconds
SC	Special Condition	SO ₂	Sulfur Dioxide
SCR	Selective Catalytic Reduction	THC	Total Hydrocarbons
SRN	State Registration Number	tpy	Tons per year
TAC	Toxic Air Contaminant	µg	Microgram
TEQ	Toxicity Equivalence Quotient	VOC	Volatile Organic Compound
VE	Visible Emissions	yr	Year

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

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 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 R 336.1219 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 R 336.1219 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 R 336.1301, 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 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 R 336.1370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

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 (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EUCTG1	One simple cycle General Electric Model PG7241 combustion turbine. The turbine is fired exclusively with pipeline quality natural gas and has a design heat input rating of 1,586 MM Btu per hour. The rated output capacity of the unit is approximately 170 megawatts.	6/01/1999 8/12/2015	FGTURBINES
EUCTG2	One combined cycle General Electric Model PG7241 combustion turbine. The turbine is fired exclusively with pipeline quality natural gas and has a design heat input rating of 1,626 MM Btu per hour. The heated and pressurized exhaust gases from the turbine are utilized to power an electric generator shaft and are then sent to an unfired heat recovery steam generator. The rated output capacity of the unit is approximately 179 megawatts.	7/23/2001 8/12/2015	FGTURBINES
EUCTG3	One combined cycle General Electric Model PG7241 combustion turbine. The turbine is fired exclusively with pipeline quality natural gas and has a design heat input rating of 1,626 MM Btu per hour. The heated and pressurized exhaust gases from the turbine are utilized to power an electric generator shaft and are then sent to an unfired heat recovery steam generator. The rated output capacity of the unit is approximately 179 megawatts.	7/9/2001 8/12/2015	FGTURBINES
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 336.1290.			

The following conditions apply to:
EUCTG1

DESCRIPTION: One simple cycle General Electric Model PG7241 combustion turbine. The turbine is fired exclusively with pipeline quality natural gas and has a design heat input rating of 1,586 MM Btu per hour. The rated output capacity of the unit is approximately 170 megawatts.

Flexible Group ID: FGTURBINES

POLLUTION CONTROL EQUIPMENT: Dry Low NOx Combustor

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NOx as NO ₂	9 ppmv at 15% O ₂ on a dry basis	Test Protocol*	EUCTG1	SC VI.2, GC 13	R 336.1205(1)(a), R 336.2802(4), 40 CFR Part 60 Subpart GG
2. NOx as NO ₂	72 pph	720-hour rolling average as determined at the end of each hour that the unit operates	EUCTG1	SC VI.2, SC VI.4, GC 13	R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(c) & (d)
3. CO	9 ppmv at 15% O ₂ on a dry basis	Test Protocol*	EUCTG1	SC VI.3, GC 13	R 336.1205(1)(a), R 336.2802(4)
4. CO	30 pph	720-hour rolling average as determined at the end of each hour that the unit operates	EUCTG1	SC VI.3, SC VI.4, GC 13	R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(d)
5. VOC	2.8 pph	Test Protocol*	EUCTG1	SCV.1, SC VI.1	R 336.1205(1)(a), R 336.2802(4)
6. PM10	9 pph	Test Protocol*	EUCTG1	SC V.1, SC VI.1	R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(c) & (d)

*Test Protocol shall specify averaging time.

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

1. Testing to verify PM10 and VOC emission limits shall be conducted within 180 days of the issuance of this permit if an acceptable emissions test has not been conducted within 5 years prior to the issuance of the RO permit, unless the permittee has submitted to the AQD District Supervisor an acceptable demonstration that the most recent acceptable test remains valid and representative. 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. **(R 336.2003, R 336.2004)**
2. No less than 30 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. **(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 install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the natural gas usage rate in EUCTG1 on an hourly and monthly basis. The heating value of the natural gas in BTU per cubic foot shall be determined on a monthly basis from one sample taken from the main gas pipeline to the facility on the permittee's property. Upon request, the AQD District Supervisor may authorize a different sampling method and/or sampling schedule. **(40 CFR Part 75, Appendix D, R 336.1205(1)(a))**
2. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner, a device to monitor and record the NO_x (as NO₂) emissions from EUCTG1 on a continuous basis. Installation and operation of the Continuous Emission Monitoring System (CEMS) or equivalent Predictive Emissions Monitoring System (PEMS) shall meet the timelines, requirements, and reporting detailed in 40 CFR Part 60 Appendix F. If the permittee chooses to use a PEMS in lieu of a CEMS to monitor NO_x emissions, the permittee shall follow the protocol as approved by the Environmental Protection Agency (EPA). **(40 CFR Part 75 Subpart E, 40 CFR Part 75.66(d))**
3. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner, a device to monitor and record the CO emissions from EUCTG1 on a continuous basis. Installation and operation of the Continuous Emission Monitoring System (CEMS) shall meet the timelines, requirements, and reporting detailed in 40 CFR Part 60 Appendix F. If the permittee chooses to use a Predictive Emissions Monitoring System (PEMS) in lieu of a CEMS to monitor CO emissions, the permittee shall follow the protocol as approved by the Environmental Protection Agency (EPA). **(40 CFR Part 75 Subpart E, 40 CFR Part 75.66(d))**
4. The permittee shall maintain the following records
 - a. Hourly NO_x emission rate, in pph.
 - b. Hourly CO emission rate, in pph.
 - c. 720-hour rolling average NO_x emission rate in pph, based on actual hours of turbine operation. Upon issuance of this PTI the 720-hour rolling average shall include the previous 720 hours of operation.
 - d. 720-hour rolling average CO emission rate in pph, based on actual hours of turbine operation. Upon issuance of this PTI the 720-hour rolling average shall include the previous 720 hours of operation.
 - e. Monthly hours of turbine operation including startup and shutdown.
 - f. Total monthly PM10 emission rate in tons per month.
 - g. Total monthly VOC emission rate in tons per month.**(40 CFR Part 75, R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(c) & (d))**
5. The permittee shall verify compliance with the emission limitations for EUCTG1 by following the procedures and methodologies contained in the document entitled "Protocol for Demonstrating Continuous Compliance with the Emission Limitations of MI-ROP-N6631-2004" dated May 31, 2011, or subsequent revisions to this document as provided under Special Condition VI.6. **(R 336.1205(1)(a))**

6. If it becomes necessary to modify the document entitled "Protocol for Demonstrating Continuous Compliance with the Emission Limitations of MI-ROP-N6631-2004" dated May 31, 2011, the permittee shall re-submit the document to the District Supervisor for review and written approval before implementing any modifications to the protocol. **(R 336.1205(1)(a))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

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. SVCTG1	213	60	R 336.1225, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENTS

1. If the permittee chooses to use a Predictive Emissions Monitoring System (PEMS) to monitor NOx emissions, the permittee shall follow the protocol delineated in the Environmental Protection Agency's (EPA) April 5, 2006, approval letter for GTP1. **(40 CFR Part 75 Subpart E, 40 CFR Part 75.66(d))**
2. If the permittee chooses to use a Predictive Emissions Monitoring System (PEMS) to monitor CO emissions, the permittee shall follow the protocol delineated in Performance Specification 16 in Appendix B of 40 CFR Part 60. **(40 CFR Part 60 Appendix B).**

Footnotes:

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

The following conditions apply to:
EUCTG2

DESCRIPTION: One combined cycle General Electric Model PG7241 combustion turbine. The turbine is fired exclusively with pipeline quality natural gas and has a design heat input rating of 1,626 MM Btu per hour. The heated and pressurized exhaust gases from the turbine are utilized to power an electric generator shaft and are then sent to an unfired heat recovery steam generator. The rated output capacity of the unit is approximately 179 megawatts.

Flexible Group ID: FGTURBINES

POLLUTION CONTROL EQUIPMENT: Dry Low NOx Combustor

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NOx as NO ₂	9 ppmv at 15% O ₂ on a dry basis.	Test Protocol*	EUCTG2	SC VI.2, GC 13	R 336.1205(1)(a), R 336.2802(4)
2. NOx as NO ₂	71 pph	720-hour rolling average as determined at the end of each hour that the unit operates	EUCTG2	SC VI.2, SC VI.5, GC 13	R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(c) & (d)
3. CO	9 ppmv at 15% O ₂ on a dry basis	Test Protocol*	EUCTG2	SC VI.3, GC 13	R 336.1205(1)(a), R 336.2802(4)
4. CO	31 pph	720-hour rolling average as determined at the end of each hour that the unit operates	EUCTG2	SC VI.3, SC VI.5, GC 13	R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(d)
5. VOC	2.8 pph	Test Protocol*	EUCTG2	SC V.1, SC VI.1	R 336.1205(1)(a), R 336.2802(4)
6. PM10	9 pph	Test Protocol*	EUCTG2	SC V.1, SC VI.1	R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(c) & (d)

*Test Protocol shall specify averaging time.

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

1. Testing to verify PM10 and VOC emission limits shall be conducted within 180 days of the issuance of this permit if an acceptable emissions test has not been conducted within 5 years prior to the issuance of the RO permit, unless the permittee has submitted to the AQD District Supervisor an acceptable demonstration that the most recent acceptable test remains valid and representative. 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. **(R336.2003, R336.2004).**
2. No less than 30 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. **(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 install calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the natural gas usage rate in EUCTG2 on an hourly and monthly basis. The heating value of the natural gas in Btu per cubic foot shall be determined on a monthly basis from one sample taken from the main gas pipeline into the facility on the permittee's property. Upon request, the AQD District Supervisor may authorize a different sampling method and/or sampling schedule. **(R 336.1205(1)(a))**
2. The permittee shall install calibrate, maintain and operate in a satisfactory manner a device to monitor and record the NO_x (as NO₂) emissions from EUCTG2 on a continuous basis. Installation and operation of the Continuous Emission Monitoring System (CEMS) or equivalent Predictive Emissions Monitoring System (PEMS) shall meet the timelines, requirements, and reporting detailed in 40 CFR Part 60 Appendix F. If the permittee chooses to use a PEMS in lieu of a CEMS to monitor NO_x emissions, the permittee shall follow the protocol as approved by the Environmental Protection Agency's (EPA) September 6, 2006, approval letter for GT2100. **(40 CFR Part 75 Subpart E, 40 CFR Part 75.66(d))**
3. The permittee shall install calibrate, maintain and operate in a satisfactory manner a device to monitor and record the CO emissions from EUCTG2 on a continuous basis. Installation and operation of the Continuous Emission Monitoring System (CEMS) shall meet the timelines, requirements and reporting detailed in 40 CFR Part 60 Appendix F. If the permittee chooses to use a Predictive Emissions Monitoring System (PEMS) in lieu of a CEMS to monitor CO emissions, the permittee shall follow the protocol as approved by the Environmental Protection Agency (EPA). **(40 CFR Part 75 Subpart E, 40 CFR Part 75.66(d), R 336.1205(10)(a))**
4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the O₂ concentration of the stack gases on a continuous basis. **(R 336.1205(1)(a))**
5. The permittee shall maintain the following records
 - a. Hourly NO_x emission rate, in pph.
 - b. Hourly CO emission rate, in pph.
 - c. 720-hour rolling average NO_x emission rate in pph, based on actual hours of turbine operation. Upon issuance of this PTI the 720-hour rolling average shall include the previous 720 hours of operation.
 - d. 720-hour rolling average CO emission rate in pph, based on actual hours of turbine operation. Upon issuance of this PTI the 720-hour rolling average shall include the previous 720 hours of operation.
 - e. Monthly hours of turbine operation including startup and shutdown.
 - f. Total monthly PM10 emission rate in tons per month.
 - g. Total monthly VOC emission rate in tons per month.**(R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(c) & (d))**
6. The permittee shall verify compliance with the emission limitations for EUCTG2 by following the procedures and methodologies contained in the document entitled "Protocol for Demonstrating Continuous Compliance with the Emission Limitations of MI-ROP-N6631-2004" dated May 31, 2011, or subsequent revisions to this document as provided under Special Condition VI.7. **(R 336.1205(1)(a))**

7. If it becomes necessary to modify the document entitled "Protocol for Demonstrating Continuous Compliance with the Emission Limitations of MI-ROP-N6631-2004" dated May 31, 2011, the permittee shall submit the revised document to the District Supervisor for review and written approval before implementing any modifications to the protocol. **(R 336.1205(1)(a))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

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. SVCGT2	210	150	R 336.1225, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENTS

NA

Footnotes:

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

The following conditions apply to:
EUCTG3

DESCRIPTION: One combined cycle General Electric Model PG7241 combustion turbine. The turbine is fired exclusively with pipeline quality natural gas and has a design heat input rating of 1.626 MM Btu per hour. The heated and pressurized exhaust gases from the turbine are utilized to power an electric generator shaft and are then sent to an unfired heat recovery steam generator. The rated output capacity of the unit is approximately 179 megawatts.

Flexible Group ID: FGTURBINES

POLLUTION CONTROL EQUIPMENT: Dry Low NOx Combustor

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NOx as NO ₂	9 ppmv at 15% O ₂ on a dry basis.	Test Protocol*	EUCTG3	SC VI.2, GC 13	R 336.1205(1)(a), R 336.2802(4)
2. NOx as NO ₂	71 pph	720-hour rolling average as determined at the end of each hour that the unit operates	EUCTG3	SC VI.2, SC VI.5, GC 13	R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(c) & (d)
3. CO	9 ppmv at 15% O ₂ on a dry basis	Test Protocol*	EUCTG3	SC VI.3, GC 13	R 336.1205(1)(a), R 336.2802(4)
4. CO	31 pph	720-hour rolling average as determined at the end of each hour that the unit operates	EUCTG3	SC VI.3, SC VI.5, GC 13	R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(d)
5. VOC	2.8 pph	Test Protocol*	EUCTG3	SC V.1, SC VI.1	R 336.1205(1)(a), R 336.2802(4)
6. PM10	9 pph	Test Protocol*	EUCTG3	SC V.1, SC VI.1	R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(c) & (d)

*Test Protocol shall specify averaging time.

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

1. Testing to verify PM10 and VOC emission limits shall be conducted within 180 days of the issuance of this permit if an acceptable emissions test has not been conducted within 5 years prior to the issuance of the RO permit, unless the permittee has submitted to the AQD District Supervisor an acceptable demonstration that the most recent acceptable test remains valid and representative. 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. **(R336.2003, R336.2004).**
2. No less than 30 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. **(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 install calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the natural gas usage rate in EUCTG3, on an hourly and monthly basis. The heating value of the natural gas in BTU per cubic foot shall be determined on a monthly basis from one sample taken from the main gas pipeline into the facility on the permittee's property. Upon request, the AQD District Supervisor may authorize a different sampling method and/or sampling schedule. **(R 336.1205(1)(a))**
2. The permittee shall install calibrate, maintain and operate in a satisfactory manner a device to monitor and record the NO_x (as NO₂) emissions from EUCTG3 on a continuous basis. Installation and operation of the Continuous Emission Monitoring System (CEMS) or equivalent Predictive Emissions Monitoring System (PEMS) shall meet the timelines, requirements, and reporting detailed in 40 CFR Part 60 Appendix F. If the permittee chooses to use a PEMS in lieu of a CEMS to monitor NO_x emissions, the permittee shall follow the protocol delineated in the Environmental Protection Agency's (EPA) September 6, 2006, approval letter for GTP3100. **(40 CFR Part 75 Subpart E, 40 CFR Part 75.66(d))**
3. The permittee shall install calibrate, maintain and operate in a satisfactory manner a device to monitor and record the CO emissions from EUCTG3 on a continuous basis. Installation and operation of the Continuous Emission Monitoring System CEMS shall meet the timelines, requirements and reporting detailed in 40 CFR Part 60 Appendix F. If the permittee chooses to use a Predictive Emissions Monitoring System (PEMS) in lieu of a CEMS to monitor CO emissions, the permittee shall follow the protocol as approved by the Environmental Protection Agency. **(40 CFR Part 75 Subpart E, 40 CFR Part 75.66(d), (R336.1205(1)(a)))**
4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the O₂ concentration of the stack gases on a continuous basis. **(R 336.1205(1)(a))**
5. The permittee shall maintain the following records
 - a. Hourly NO_x emission rate, in pph.
 - b. Hourly CO emission rate, in pph.
 - c. 720-hour rolling average NO_x emission rate in pph, based on actual hours of turbine operation. Upon issuance of this PTI the 720-hour rolling average shall include the previous 720 hours of operation.
 - d. 720-hour rolling average CO emission rate in pph, based on actual hours of turbine operation. Upon issuance of this PTI the 720-hour rolling average shall include the previous 720 hours of operation.
 - e. Monthly hours of turbine operation including startup and shutdown.
 - f. Total monthly PM10 emission rate in tons per month.
 - g. Total monthly VOC emission rate in tons per month.**(R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(c) & (d))**
6. The permittee shall verify compliance with the emission limitations for EUCTG3 by following the procedures and methodologies contained in the document entitled "Protocol for Demonstrating Continuous Compliance with the Emission Limitations of MI-ROP-N6631-2004" dated May 31, 2011, or subsequent revisions to this document as provided under special condition VI.7. **(R 336.1205(1)(a))**

7. If it becomes necessary to modify the document entitled "Protocol for Demonstrating Continuous Compliance with the Emission Limitations of MI-ROP-N6631-2004" dated May 31, 2011, the permittee shall submit the revised document to the District Supervisor for review and written approval before implementing any modifications to the protocol. **(R 336.1205(1)(a))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

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. SVCGT3	210	150	R 336.1225, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENTS

NA

Footnotes:

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

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
FGTURBINES	This emission group consists of the simple cycle combustion turbine, and two combined cycle turbines	EUCTG1, EUCTG2, and EUCTG3
FGNSPSK K K K K	This flexible group consists of the two combined cycle turbines which are subject to NSPS K K K K.	EUCTG2, EUCTG3

The following conditions apply to:
FGTURBINES

DESCRIPTION: This emission group consists of the simple cycle combustion turbine, and two combined cycle turbines

Emission Units: EUCTG1, EUCTG2, and EUCTG3

POLLUTION CONTROL EQUIPMENT: Dry Low NOx Combustors

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NOx as NO ₂	815 tpy	12-month rolling time period as determined at the end of each calendar month	FGTURBINES	SC VI.2	R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(c) & (d)
2. CO	403 tpy	12-month rolling time period as determined at the end of each calendar month	FGTURBINES	SC VI.2	R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(c) & (d)
3. VOC	36 tpy	12-month rolling time period as determined at the end of each calendar month	FGTURBINES	SC VI.2	R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(c) & (d)
4. PM10	118 tpy	12-month rolling time period as determined at the end of each calendar month	FGTURBINES	SC VI.2	R 336.1205(1)(a), R 336.2802(4), 40 CFR 52.21(c) & (d)

*Test Protocol shall specify averaging time.

II. MATERIAL LIMITS

1. The turbines shall not be fired with any fuel other than pipeline quality natural gas. Natural gas is defined in 40 CFR Part 72 Section 72.2. **(R 336.1205(1)(a))**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall submit to the AQD District Supervisor a plan that describes how emissions will be minimized during startup and shutdown within 60 days of completion of modifications to FGTURBINES. 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 336.1205(1)(a) & (b), R 336.1911, R 336.1912)**

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall maintain the following records for FGTURBINES
 - a. PM10 emission rate, in tons/month, and tons per 12 month rolling time period as determined at the end of each calendar month.
 - b. CO emission rate, in tons/month, and tons per 12 month rolling time period as determined at the end of each calendar month.
 - c. VOC emission rate, in tons/month, and tons per 12 month rolling time period as determined at the end of each calendar month.
 - d. Annual NO_x (as NO₂) emission rate, in tons/month, and tons per 12 month rolling time period as determined at the end of each calendar month.
(R 336.1205(1)(a), R 336.2802(4))
2. The permittee shall verify compliance with the emission limitations for FGTURBINES by following the procedures and methodologies contained in the document entitled "Protocol for Demonstrating Continuous Compliance with the Emission Limitations of ROP-MI-N6631-2004" dated May 31, 2011, or subsequent revisions to this document as provided under special condition VI.3. **(R 336.1205(1)(a))**
3. If it becomes necessary to modify the document entitled "Protocol for Demonstrating Continuous Compliance with the Emission Limitations of ROP-MI-N6631-2004" dated May 31, 2011, the permittee shall submit the revised document to the District Supervisor for review and written approval before implementing such modifications to the protocol. **(R 336.1205(1)(a))**

VII. REPORTING

1. 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 initial start-up of FGTURBINES. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Footnotes:

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

The following conditions apply to:
FGNSPSK K K K K

DESCRIPTION: This flexible group consists of the two combined cycle turbines which are subject to NSPS K K K K.

Emission Units: EUCTG2 and EUCTG3

POLLUTION CONTROL EQUIPMENT: Dry Low NOx Combustors

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NOx	42 ppm at 15 percent O ₂ or 290 ng/Joules of useful output (2.3 lb/MWh)	30-day rolling average (when using a CEMS or equivalent)	Each turbine in FGNSPSK K K K K	SC V.1, SC VI.4	40 CFR 60.4320(a)

II. MATERIAL LIMITS

1. The permittee shall not burn in FGNSPSK K K K K any fuel which contains total potential sulfur emissions in excess of 26 ng SO₂/Joules (0.060 lb SO₂/MMBtu) heat input. **(40 CFR Part 60.4330(a)(2))**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall operate and maintain the stationary combustion turbines, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction. **(40 CFR 60.4333(a))**

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

1. If the permittee does not use the continuous emissions monitoring allowance as specified in SC VI.1, then within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup, federal Standards of Performance for New Stationary Sources require verification of NOx emission rates from each turbine included in FGNSPSK K K K K, by testing at owner's expense, in accordance with 40 CFR Parts 60.8 and 60.4400.
 - a. The permittee shall conduct three separate test runs, at least 20 minutes each, at ambient temperatures greater than 0 °F, and at any load condition within ±25 percent of 100 percent peak load.
 - b. Testing must be conducted annually (at least every 14 calendar months).
 - c. If the stack test result is less than or equal to 75 percent of the NOx limits in SC I.1, the test plan can be changed to once every two years (at least every 26 calendar months). If subsequent test results yield NOx emissions greater than 75 percent of the NOx limit in SC I.1, annual testing must be resumed.

- d. Subsequent stack testing is not required if the permittee shows continuous compliance with the NO_x emission limits with a CEMS or equivalent PEMS pursuant to 40 CFR 60.4340(b)(ii), as specified in SC VI.1.
- e. 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 45 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 60.4400)**

VI. MONITORING/RECORDKEEPING

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

1. In lieu of the stack testing required in SC V.1, the permittee may instead install, calibrate, maintain and operate one of the following continuous monitoring systems:
 - a. Continuous emission monitoring as described in §60.4335(b) and 60.4345, or
 - b. Continuous parameter monitoring as follows:
 - (i) For a diffusion flame turbine without add-on selective catalytic reduction (SCR) controls, the permittee shall define parameters indicative of the unit's NO_x formation characteristics, and monitor these parameters continuously.
 - (ii) For any lean premix stationary combustion turbine, the permittee shall continuously monitor the appropriate parameters to determine whether the unit is operating in low-NO_x mode.
 - (iii) For any turbine that uses SCR to reduce NO_x emissions, the permittee shall continuously monitor appropriate parameters to verify the proper operation of the emission controls.
 - (iv) For affected units that are also regulated under 40 CFR Part 75, with state approval the permittee may monitor the NO_x emission rate using the methodology in Appendix E to 40 CFR Part 75, or the low mass emissions methodology in §75.19, the requirements of this condition may be met by performing the parametric monitoring described in Section 2.3 of 40 CFR Part 75 Appendix E or in §75.19(c)(1)(iv)(H). **(40 CFR 60.4340(b))**
2. In lieu of the subsequent stack test requirements listed in SC V.1, the permittee may instead continuously monitor appropriate parameters to determine that each turbine is operating in low-NO_x mode. The parameters must be continuously monitored and recorded during the initial performance test to establish acceptable values and ranges. The permittee must develop and keep on-site a parameter monitoring plan pursuant to 40 CFR 60.4355 (a)(1) through (6). **(40 CFR 60.4340(b)(ii), 40 CFR 60.4355, 40 CFR 60.4410)**
3. The permittee shall monitor the sulfur content in the fuel once per turbine operating day, using the methods described in 40 CFR 60.4415, or alternate methods as described in 40 CFR 60.4360. The permittee may use a custom monitoring schedule pursuant to 40 CFR 60.4370(c) if the schedule has been approved by the EPA Administrator. Sulfur in fuel monitoring is not required if it is demonstrated that the potential sulfur emissions do not exceed 26 ng SO₂/Joules (0.060 lb SO₂/MMBtu) heat input. The demonstration shall include one of the following:
 - a. The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying that the maximum total sulfur content is 20 grains of sulfur per 100 standard cubic feet or less; or
 - b. Representative fuel sampling data, as specified in 40 CFR Part 75, Appendix D, Section 2.3.1.4 or 2.3.2.4, shows that the sulfur content does not exceed 26 ng SO₂/Joules (0.060 lb SO₂/MMBtu) heat input.**(40 CFR 60.4360, 40 CFR 60.4370)**
4. The permittee shall keep, in a satisfactory manner, records of the sulfur content of the fuel once each operating day for FGNSPSK, as required by SC VI.6. This condition does not apply if it is demonstrated that the potential sulfur emissions do not exceed 26 ng SO₂/Joules (0.060 lb SO₂/MMBtu) per MMBtu heat input pursuant to 40 CFR 60.4365. The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.4370)**

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. If any of the turbines in FGNSPSK K K K K contain a continuous parameter monitoring system to determine continuous compliance with the NO_x emission limits pursuant to SC VI.4, the permittee shall submit excess emissions and monitor downtime in accordance with 40 CFR 60.7(c) and 40 CFR 60.4380(c). An excess emission is a 4-hour rolling operating hour average for each turbine in which any monitored parameter does not achieve the target value or is outside the acceptable range defined in the monitoring plan. Monitor downtime is any turbine operating hour in which any of the required parametric data are either not recorded or invalid. All reports must be postmarked by the 30th day following the end of each 6-month period. **(40 CFR 60.4375(a), 40 CFR 60.4380(c), 40 CFR 60.4395)**
3. If the permittee is required to monitor the sulfur content in the fuel pursuant to SC VI.3 and 40 CFR 60.4360, the permittee shall submit excess emissions and monitor downtime in accordance with 40 CFR 60.7(c) and 60.4385. An excess emission is each turbine operating hour beginning on the date and hour that any sample shows an exceedance in the applicable sulfur limit and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit. Monitor downtime begins when a required sample is not taken by its due date or the date and hour that invalid results are obtained. Monitor downtime ends on the date and hour of the next valid sample. All reports must be postmarked by the 30th day following the end of each 6-month period. **(40 CFR 60.4375(a), 40 CFR 60.4385, 40 CFR 60.4395)**

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

1. The permittee shall comply with the provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subpart A and Subpart K K K K, as they apply to FGNSPSK K K K K. **(40 CFR Part 60 Subparts A & K K K K)**

Footnotes:

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