

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

December 2, 2022

PERMIT TO INSTALL
156-22

ISSUED TO
Lansing Board of Water & Light

LOCATED AT
1201 South Washington Avenue
REO Town Plant
Lansing, Michigan 48910

IN THE COUNTY OF
Ingham

STATE REGISTRATION NUMBER
B2647

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: October 31, 2022	
DATE PERMIT TO INSTALL APPROVED: December 2, 2022	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

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 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
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 condition 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
EUTURBINE2	A 430 MMBTU/hr natural gas-fired turbine with an electrical generator located at REO Town Plant.	04-15-2013	FGTURB/HRSG2
EUTURBINE2A	A 430 MMBTU/hr natural gas-fired turbine with an electrical generator located at REO Town Plant.	TBD	FGTURB/HRSG2
EUHRSG2	A HRSG with a 71.4 MMBTU/hr natural gas-fired duct burner located at REO Town Plant.	06-16-2013	FGTURB/HRSG2

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.

**EUTURBINE2
 EMISSION UNIT CONDITIONS**

DESCRIPTION

A 430 MMBTU/hr natural gas-fired turbine with an electrical generator located at REO Town Plant.

Flexible Group ID: FGTURB/HRSG2

POLLUTION CONTROL EQUIPMENT

Low NOx Burners

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NO _x	25 ppmv dry at 15% oxygen	30-day rolling average as determined each day the turbine operates	EUTURBINE2	SC VI.2, SC VI.4	R 336.1205(1)(a) and (b), 40 CFR 60.4320(a)
2. NO _x	39.6 pph	24-hour rolling average as determined each hour the turbine operates	EUTURBINE2	SC VI.2, SC VI.4	R 336.1205(1)(a) and (b), R 336.2802(4), R 336.2803, R 336.2804, 40 CFR 52.21(a)(2), (c), and (d)
3. CO	50 ppmv dry at 15% oxygen	Hourly	EUTURBINE2	SC V.1	R 336.1205(1)(a) and (b)
4. CO	48.2 pph	Hourly	EUTURBINE2	SC V.1	R 336.1205(1)(a), and (b), R 336.2802(4), R 336.2804, 40 CFR 52.21(a)(2) and (d)
5. PM	2.0 pph	Hourly	EUTURBINE2	SC V.2	R 336.1205(1)(a) and (b), R 336.1224, R 336.1331(1)(c)
6. PM ₁₀	5.0 pph	Hourly	EUTURBINE2	SC V.2	R 336.1205(1)(a) and (b), R 336.2802(4), R 336.2803, R 336.2804, 40 CFR 52.21(a)(2), (c), and (d)
7. PM _{2.5}	5.0 pph	Hourly	EUTURBINE2	SC V.2	R 336.1205(1)(a) and (b), R 336.2802(4), R 336.2803, R 336.2804, 40 CFR 52.21(a)(2), (c), and (d)

II. MATERIAL LIMIT(S)

- The permittee shall only combust pipeline quality natural gas in EUTURBINE2. **(R 336.1205(1)(a), R 336.1401, R 336.1702(a), 40 CFR 60.4330)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUTURBINE2 unless a malfunction abatement plan (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.
 - d) Identification of the source, and operating variables and ranges for varying loads, shall be monitored and recorded. The normal operating range of these variables and a description of the method of monitoring shall be maintained.

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 90 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 not operate EUTURBINE2 unless the AQD District Supervisor has approved a plan that describes how emissions will be minimized during startup and shutdown. 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)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The maximum design heat input capacity of EUTURBINE2 shall not exceed 430 MMBTU per hour on a fuel heat input basis. **(R 336.1205(1)(a) and (b))**

V. TESTING/SAMPLING

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

1. The permittee shall verify CO emission rates from EUTURBINE2 by testing at the owner's expense, in accordance with the Department requirements unless the permittee makes a request, to the AQD District Office, to only test with the duct burners operating. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
CO	40 CFR Part 60, Appendix A

The hourly emission rate shall be determined by the average of three test runs per the method requirements. 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 336.2001, R 336.2003, R 336.2004, R 336.2804, 40 CFR 52.21(a)(2) and (d))**

- The permittee shall verify PM, PM10, and PM2.5 emission rates from EUTURBINE2 by testing at owner's expense, in accordance with the Department requirements unless the permittee makes a request, to the AQD District Office, to only test with the duct burners operating. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM10 / PM2.5	40 CFR Part 51, Appendix M

The hourly emission rate shall be determined by the average of three test runs per the method requirements. 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), R 336.1331, R 336.2001, R 336.2003, R 336.2004, R 336.2802(4), R 336.2803, R 336.2804, 40 CFR 52.21(a)(2), (c), and (d))**

- The permittee shall verify the CO, PM, PM10, and PM2.5 emission rates from EUTURBINE2, at a minimum, every five years from the date of the last test. **(R 336.1205(1)(a), R 336.2001, R 336.2003, R 336.2004, R 336.2802(4), R 336.2803, R 336.2804, 40 CFR 52.21(a)(2), (c), and (d))**

VI. MONITORING/RECORDKEEPING

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

- 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, R 336.2802(4), R 336.2803, R 336.2804, 40 CFR 52.21(a)(2), (c), and (d))**
- The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the NOx emissions and oxygen or carbon dioxide (O₂ or CO₂) content of the exhaust gas from EUTURBINE2 on a continuous basis. The permittee shall install and operate the CEM system to meet the timelines, requirements and reporting detailed in Appendix A. **(R 336.1205(1)(a), R 336.2802(4), R 336.2803, R 336.2804, 40 CFR 52.21(a)(2), (c), and (d), 40 CFR 60.4345)**
- The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the fuel flow rate from EUTURBINE2 on a continuous basis. The monitor shall be operated in accordance with 40 CFR 60.4345(c). **(R 336.1205(1)(a), R 336.2802(4), R 336.2803, R 336.2804, 40 CFR 52.21(a)(2), (c), and (d), 40 CFR 60.4345)**
- The permittee shall keep, in a satisfactory manner, 30-day rolling average NOx emission rate and 24-hour rolling average NOx mass emission records for EUTURBINE2, as required by SC I.1 and I.2. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a), R 336.2802(4), R 336.2803, R 336.2804, 40 CFR 52.21(a)(2), (c), and (d), 40 CFR 60.4345)**
- 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:
 - Compliance tests and any testing required under the special conditions of this permit;
 - Monitoring data;
 - Total sulfur content of the natural gas as required by 40 CFR 60.4365(a);
 - Verification of heat input capacity required to show compliance with SC IV.1;
 - Identification, type and the amounts of fuel combusted in EUTURBINE2 on a calendar month basis;
 - All records required by 40 CFR 60.7;

- g) Records of the duration of all times EUTURBINE2 is operated under startup or shutdown conditions as defined in SC III.2;
 - h) 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 336.1331, R 336.1401, R 336.1702(a), R 336.1912, R 336.2802(4), R 336.2803, R 336.2804, 40 CFR 52.21(a)(2), (c), and (d), 40 CFR 60.7(f))**

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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-MAIN2	120	160	R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d)

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 KKKK, as they apply to EUTURBINE2. **(40 CFR Part 60, Subparts A and KKKK)**
- 2. The permittee shall not operate EUTURBINE2A until EUTURBINE2 is removed from service. Once EUTURBINE2 is removed from service, the permittee shall comply with the conditions within EUTURBINE2A. **(R 336.1201)**

Footnotes:

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

**EUTURBINE2A
 EMISSION UNIT CONDITIONS**

DESCRIPTION

A 430 MMBTU/hr natural gas-fired turbine with an electrical generator located at REO Town Plant.

Flexible Group ID: FGTURB/HRSG2

POLLUTION CONTROL EQUIPMENT

Low NOx Burners

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NO _x	15 ppmv dry at 15% oxygen	30-day rolling average as determined each day the turbine operates	EUTURBINE2A	SC VI.2, SC VI.4	R 336.1205(1)(a)
2. NO _x	25 ppmv dry at 15% oxygen	30-day rolling average as determined each day the turbine operates	EUTURBINE2A	SC VI.2, SC VI.4	40 CFR 60.4320(a)
3. CO	25 ppmv dry at 15% oxygen	Hourly	EUTURBINE2A	SC V.1	R 336.1205(1)(a)

II. MATERIAL LIMIT(S)

1. The permittee shall only combust pipeline quality natural gas in EUTURBINE2A. **(R 336.1205(1)(a), R 336.1702(a), 40 CFR 60.4330)**
2. The pipeline quality natural gas shall not have a total sulfur content in excess of 20 grains of sulfur per 100 standard cubic feet of gas in accordance with 40 CFR 60.4365(a). **(40 CFR 60.4365(a))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Within 180 days after trial operation of EUTURBINE2A, the permittee shall submit, implement, and maintain a malfunction abatement plan (MAP) as described in Rule 911(2) 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.
 - d) Identification of the source, and operating variables and ranges for varying loads, shall be monitored and recorded. The normal operating range of these variables and a description of the method of monitoring shall be maintained.

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 90 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 not operate EUTURBINE2A 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 EUTURBINE2A. 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)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The maximum design heat input capacity of EUTURBINE2A shall not exceed 430 MMBTU per hour on a fuel heat input basis. **(R 336.1205(1)(a))**

V. TESTING/SAMPLING

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

1. Upon the request of the AQD District Supervisor, the permittee shall verify CO emission rates from EUTURBINE2A 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
CO	40 CFR Part 60, Appendix A

The hourly emission rate shall be determined by the average of three test runs per the method requirements. 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 60 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), R 336.1902, 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)**
2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the NO_x emissions and oxygen or carbon dioxide (O₂ or CO₂) content of the exhaust gas from EUTURBINE2A on a continuous basis. The permittee shall install and operate the CEM system to meet the timelines, requirements and reporting detailed in Appendix A. **(R 336.1205(1)(a), 40 CFR 60.4345)**
3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the fuel flow rate from EUTURBINE2A on a continuous basis. The monitor shall be operated in accordance with 40 CFR 60.4345(c). **(R 336.1205(1)(a), 40 CFR 60.4345)**
4. The permittee shall keep, in a satisfactory manner, 30-day rolling average NO_x emission rate and 24-hour rolling average NO_x mass emission records for EUTURBINE2A, as required by SC I.1 and I.2. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a), 40 CFR 60.4345)**

5. 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 60.4365(a);
 - d) Verification of heat input capacity required to show compliance with SC IV.1;
 - e) Identification, type and the amounts of fuel combusted in EUTURBINE2A on a calendar month basis;
 - f) All records required by 40 CFR 60.7;
 - g) Records of the duration of all times EUTURBINE2A is operated under startup or shutdown conditions as defined in SC III.2;
 - h) 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 336.1225, R 336.1331, R 336.1702(a), R 336.1912, 40 CFR 60.7(f))**

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 trial operation of EUTURBINE2A. **(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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-MAIN2	120	160	R 336.1225, 40 CFR 52.21(c) and (d)

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 KKKK, as they apply to EUTURBINE2A. **(40 CFR Part 60, Subparts A and KKKK)**
2. The permittee shall not operate EUTURBINE2A until EUTURBINE2 is removed from service. Once EUTURBINE2 is removed from service, the permittee shall comply with the conditions within EUTURBINE2A and FGTURB/HRSG2. **(R 336.1201)**

Footnotes:

¹This 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
FGTURB/HRSG2	A 430 MMBTU per hour natural gas-fired turbine, a HRSG with a 71.4 MMBTU per hour natural gas-fired duct burner and an electrical generator operating in combined-cycle mode.	EUTURBINE2 or EUTURBINE2A, EUHRSG2

**FGTURB/HRSG2
 FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

A 430 MMBTU per hour natural gas-fired turbine, a HRSG with a 71.4 MMBTU per hour natural gas-fired duct burner and an electrical generator operating in combined-cycle mode.

Emission Units: EUTURBINE2 or EUTURBINE2A, EUHRSG2

POLLUTION CONTROL EQUIPMENT

Low NOx Burners

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NO _x	25 ppmv dry at 15% oxygen	30-day rolling average as determined each day the turbine operates	FGTURB/HRSG2	SC VI.2, SC VI.4	R 336.1205(1)(a) and (1)(b), 40 CFR 60.4320(a)
2. NO _x	42.5 pph	24-hour rolling average as determined each hour the boiler operates	FGTURB/HRSG2	SC VI.2, SC VI.4	R 336.1205(1)(a) and (1)(b), R 336.2803, R 336.2804
3. NO _x	179.6 tpy	12-month rolling time period as determined at the end of each calendar month	FGTURB/HRSG2	SC VI.2, SC VI.4	R 336.2802(4), R 336.2803, R 336.2804
4. CO	50 ppmv dry at 15% oxygen	Hourly	FGTURB/HRSG2	SC V.1	R 336.1205(1)(a) and (1)(b)
5. CO	51.7 pph	Hourly	FGTURB/HRSG2	SC V.1	R 336.1205(1)(a) and (1)(b), R 336.2804
6. PM	2.1 pph	Hourly	FGTURB/HRSG2	SC V.2	R 336.1205(1)(a) and (1)(b), R 336.1224, R 336.1331(1)(c)
7. PM ₁₀	5.5 pph	Hourly	FGTURB/HRSG2	SC V.2	R 336.1205(1)(a) and (1)(b), R 336.2803, R 336.2804
8. PM _{2.5}	5.5 pph	Hourly	FGTURB/HRSG2	SC V.2	R 336.1205(1)(a) and (1)(b), R 336.2803, R 336.2804

II. MATERIAL LIMIT(S)

- The permittee shall only combust pipeline quality natural gas in FGTURB/HRSG2. **(R 336.1205(1)(a), R 336.1401, R 336.1702(a), 40 CFR 60.4330)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

- The permittee shall not operate FGTURB/HRSG2 (with EUTURBINE2) unless a malfunction abatement plan (MAP) as described in Rule 911(2) is implemented and maintained. The permittee shall submit, implement, and maintain a revised MAP within 180 days after trial operation of EUTURBINE2A. 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.
- d) Identification of the source, and operating variables and ranges for varying loads, shall be monitored and recorded. The normal operating range of these variables and a description of the method of monitoring shall be maintained.

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 AQD 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 90 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 not operate FGTURB/HRSG2 (with EUTURBINE2) 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 EUTURBINE2A. 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)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The maximum design heat input capacity of FGTURB/HRSG2 shall not exceed 430 MMBTU per hour for EUTURBINE2, and 71.4 MMBTU per hour for EUHRSG2. **(R 336.1205(1)(a) and (1)(b))**

V. TESTING/SAMPLING

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

1. The permittee shall verify CO emission rates from FGTURB/HRSG2 by testing at the owner's expense, in accordance with the Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
CO	40 CFR Part 60, Appendix A

The hourly emission rate shall be determined by the average of three test runs per the method requirements. 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), R 336.2001, R 336.2003, R 336.2004, R 336.2804)**

2. The permittee shall verify PM, PM10, and PM2.5 emission rates from FGTURB/HRSG2 by testing at owner's expense, in accordance with the Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM10 / PM2.5	40 CFR Part 51, Appendix M

The hourly emission rate shall be determined by the average of three test runs per the method requirements. 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), R 336.1331, R 336.2001, R 336.2003, R 336.2004, R 336.2802(4), R 336.2803, R 336.2804)**

3. The permittee shall verify the CO, PM, PM10, and PM2.5 emission rates from FGTURB/HRSG2, at a minimum, every five years from the date of the last test. **(R 336.1205(1)(a), R 336.2001, R 336.2003, R 336.2004, R 336.2802(4), R 336.2803, R 336.2804)**

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, R 336.2802(4), R 336.2803, R 336.2804)**
2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the NOx emissions and oxygen or carbon dioxide (O₂ or CO₂) content of the exhaust gas from FGTURB/HRSG2 on a continuous basis. The permittee shall install and operate the CEM system to meet the timelines, requirements and reporting detailed in Appendix A. **(R 336.1205(1)(a), R 336.2802(4), R 336.2803, R 336.2804, 40 CFR 60.4345)**
3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the fuel flow rate from FGTURB/HRSG2 on a continuous basis. The monitor shall be operated in accordance with 40 CFR 60.4345(c). **(R 336.1205(1)(a), R 336.2802(4), R 336.2803, R 336.2804, 40 CFR 60.4345)**
4. The permittee shall keep, in a satisfactory manner, 24-hour rolling average, 30-day rolling average, and 12-month rolling time period NOx emission rate and mass emission records for FGTURB/HRSG2, as required by SC I.1, I.2, and I.3. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a), R 336.2802(4), R 336.2803, R 336.2804, 40 CFR 60.4345)**
5. 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 60.4365(a);
 - d) Verification of heat input capacity required to show compliance with SC IV.1;
 - e) Identification, type and the amounts of fuel combusted in FGTURB/HRSG2 on a calendar month basis;
 - f) All records required by 40 CFR 60.7;
 - g) Records of the duration of all times FGTURB/HRSG2 is operated under startup or shutdown conditions as defined in SC III.2;
 - h) 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 336.1331, R 336.1401, R 336.1702(a), R 336.1912, R 336.2802(4), R 336.2803, R 336.2804, 40 CFR 60.7(f))

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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-MAIN2	120	160	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 KKKK, as they apply to FGTURB/HRSG2. (40 CFR Part 60, Subparts A and KKKK)

Footnotes:

¹This 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 EUTURBINE2, EUTURBINE2A, and FGTURB/HRSG2.

Continuous Emission Monitoring System and Continuous Emission Rate Monitoring System (CEMS/CERMS) Requirements

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

Pollutant	Applicable PS*
NOx	2
CO ₂ /O ₂	3
CERMS	6
*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.
2. The CEMS/CERMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and PS 2, 3, and 6 (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/CERMS 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/CERMS 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/CERMS exceeds the instrument range.
 - e) If no exceedances or CEMS/CERMS 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.