

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

November 17, 2011

**PERMIT TO INSTALL
81-11**

ISSUED TO
Wolverine Power Supply Cooperative, Inc.

LOCATED AT
Sumpter Power Plant
Belleville, Michigan

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
M4854

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:

August 23, 2011

DATE PERMIT TO INSTALL APPROVED:

November 17, 2011

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

Common Acronyms		Pollutant/Measurement Abbreviations	
AQD	Air Quality Division	BTU	British Thermal Unit
ANSI	American National Standards Institute	°C	Degrees Celsius
BACT	Best Available Control Technology	CO	Carbon Monoxide
CAA	Clean Air Act	dscf	Dry standard cubic foot
CEM	Continuous Emission Monitoring	dscm	Dry standard cubic meter
CFR	Code of Federal Regulations	°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
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
MIOSHA	Michigan Occupational Safety & Health Administration	PM10	PM less than or equal to 10 microns diameter
MSDS	Material Safety Data Sheet	PM2.5	PM less than or equal 2.5 microns diameter
NESHAP	National Emission Standard for Hazardous Air Pollutants	pph	Pound per hour
NSPS	New Source Performance Standards	ppm	Parts per million
NSR	New Source Review	ppmv	Parts per million by volume
PS	Performance Specification	ppmw	Parts per million by weight
PSD	Prevention of Significant Deterioration	psia	Pounds per square inch absolute
PTE	Permanent Total Enclosure	psig	Pounds per square inch gauge
PTI	Permit to Install	scf	Standard cubic feet
RACT	Reasonably Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO ₂	Sulfur Dioxide
SC	Special Condition	THC	Total Hydrocarbons
SCR	Selective Catalytic Reduction	tpy	Tons per year
SRN	State Registration Number	µg	Microgram
TAC	Toxic Air Contaminant	VOC	Volatile Organic Compounds
TEQ	Toxicity Equivalence Quotient	yr	Year
VE	Visible Emissions		

* 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
EU-COOLTWR	A two-cell, mechanical draft cooling tower.	TBD	NA
EU-ENGINE1	A diesel fuel-fired reciprocating internal combustion engine (RICE) rated at 500 kilowatts (kW) for emergency electrical generation.	TBD	NA
EU-UNIT4	Nominal 83 MW electrical output General Electric PG7121 (EA) simple-cycle combustion turbine, fueled by pipeline quality natural gas, equipped with dry low oxides of nitrogen control.	5/29/2002 / 11/17/11	FG-TURBINES (ROP No. MI-ROP-M4854-2007a), FG-UNIT4/HRSG
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: EUCOOLTWR

DESCRIPTION: A two-cell, mechanical draft cooling tower.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Drift eliminators

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate EUCOOLTWR for more than 4,000 hours per year on a 12-month rolling time period basis as determined at the end of each calendar month. **(R 336.1205(1)(a) and (1)(b), R 336.1205(3), R 336.1331, R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j))**
2. The permittee shall not operate EUCOOLTWR unless a malfunction abatement plan (MAP) as described in Rule 911(2), has been submitted within 180 days of initial start-up, and 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 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)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall equip and maintain EUCOOLTWR with drift eliminators that have a vendor-certified maximum drift rate of 0.0005 percent or less. **(R 336.1205(1)(a) and (1)(b), R 336.1205(3), R 336.1331, R 336.1901, R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j))**

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 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 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j))
2. The permittee shall monitor and record the hours of operation of EUCOOLTWR on a monthly and 12-month rolling time period basis, in a manner acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. (R 336.1205(1)(a) and (1)(b), R 336.1205(3), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j))
3. The permittee shall maintain a record, for the life of EUCOOLTWR, of the vendor's certification required in SC IV.1. (R 336.1331, R 336.1901, R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j))

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification of EUCOOLTWR 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 EUCOOLTWR. (R 336.1201(7)(a))

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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-COOLTWR1	312	43	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 FR 52.21(c) and (d)
2. SV-COOLTWR2	312	43	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) and (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: EU-ENGINE1

DESCRIPTION: A diesel fuel-fired reciprocating internal combustion engine (RICE) rated at 500 kilowatts (kW) for emergency electrical generation.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NMHC + NOx	4.85 g/hp-hr	Test protocol will specify averaging time.	EU-ENGINE1	SC V.1, SC VI.2	R 336.1205(1)(a) and (1)(b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j), 40 CFR 60.4205
2. CO	0.31 g/hp-hr	Test protocol will specify averaging time.	EU-ENGINE1	SC V.1, SC VI.2	R 336.1205(1)(a) and (1)(b), R 336.1205(3), R 336.2804, 40 CFR 52.21(d), 40 CFR 60.4205
3. PM	0.05 g/hp-hr	Test protocol will specify averaging time.	EU-ENGINE1	SC V.1, SC VI.2	R 336.1205(1)(a) and (1)(b), R 336.1224, R 336.1331(1)(c), 40 CFR 60.4205
4. PM10	0.0573 lb/MMBtu heat input	Test protocol will specify averaging time.	EU-ENGINE1	SC V.1, SC VI.2	R 336.1205(1)(a) and (1)(b), R 336.1205(3), R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d)
5. PM2.5	0.0573 lb/MMBtu heat input	Test protocol will specify averaging time.	EU-ENGINE1	SC V.1, SC VI.2	R 336.1205(1)(a) and (1)(b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j)
6. Carbon dioxide equivalent (CO ₂ e)	716.6 pph	Test protocol will specify averaging time.	EU-ENGINE1	GC 13	R 336.1205(1)(a) and (1)(b), R 336.2810, 40 CFR 52.21(j)

II. MATERIAL LIMITS

1. The permittee shall burn only diesel fuel, in EU-ENGINE1 with the maximum sulfur content of 15 ppm (0.0015 percent) by weight. **(R 336.1205(1)(a) and (1)(b), R 336.1401, 40 CFR 60.4207(b), 40 CFR 80.510)**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate EU-ENGINE1 for more than 100 hours per year on a 12-month rolling time period basis as determined at the end of each calendar month. **(R 336.1205(1)(a) and (1)(b), R 336.1205(3), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j))**
2. The permittee shall install, maintain, and operate EU-ENGINE1 according to the manufacturer written instructions, or procedures developed by the owner/operator and approved by the engine manufacturer, over the entire life of the engine. **(R 336.1205(1)(a) and (1)(b), R 336.1225, R 336.1911, R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j), 40 CFR 60.4206, 40 CFR 60.4211)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall equip and maintain EU-ENGINE1 with non-resettable hours meters to track the operating hours. **(R 336.1205(1)(a) and (1)(b), R 336.1225, 40 CFR 60.4209)**
2. The nameplate capacity of EU-ENGINE1 shall not exceed 732 hp, as certified by the equipment manufacturer. **(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. Within 180 days after commencement of trial operation, the permittee shall verify NMHC + NO_x, CO, PM, PM10, and PM2.5 emission rates from EU-ENGINE1, by testing at owner's expense, in accordance with Department requirements or by providing manufacturer certification documentation as required in SC VI.2. No less than 60 days prior to testing, the permittee must submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1205(1)(a) and (1)(b), R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.4211)**

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 records 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 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j))**
2. The permittee shall keep, in a satisfactory manner, a record of testing required in SC V.1 or manufacturer certification documentation indicating that EU-ENGINE1 meets the applicable emission limitations contained in the federal Standards of Performance for New Stationary Sources 40 CFR Part 60 Subpart IIII. The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.4211)**
3. The permittee shall monitor and record the hours of operation of EU-ENGINE1 during emergencies and non-emergencies, on a monthly and 12-month rolling time period basis, in a manner acceptable to the AQD District Supervisor. The permittee shall record the time of operation of EU-ENGINE1 and the reason it was in operation during that time. The permittee shall keep all records on file and make them available to the

Department upon request. **(R 336.1205(1)(a) and (1)(b), R 336.1205(3), R 336.1205(3), 40 CFR 60.4211, 40 CFR 60.4214)**

4. The permittee shall keep, in a satisfactory manner, fuel supplier certification records or fuel sample test data, for each delivery of diesel fuel oil used in EU-ENGINE1, demonstrating that the fuel sulfur content meets the requirement of 40 CFR 80.510. The certification or test data shall include the name of the oil supplier or laboratory, and the sulfur content of the fuel oil. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) and (1)(b), R 336.1402(1), 40 CFR 80.510)**

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 EU-ENGINE1. **(R 336.1201(7)(a))**

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. SV-ENGINE1	8	20	R 336.1225, R336.1901 R 336.2803, R 336.2804, 40 CFR 52.21 (c) and (d)

IX. OTHER REQUIREMENTS

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 IIII, as they apply to EU-ENGINE1. **(40 CFR Part 60 Subparts A and IIII, 40 CFR 63.6590)**
2. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subpart A and Subpart ZZZZ, for Stationary Reciprocating Internal Combustion Engines, upon start-up. **(40 CFR 63.6595, 40 CFR Part 63, Subparts A and ZZZZ)**

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
FG-UNIT4/HRSG	A natural gas-fired combustion turbine with a non-fired heat recovery steam generator (HRSG) nominally rated at 130 MW electrical output operating in combined-cycle mode.	EU-UNIT4

The following conditions apply to: FG-UNIT4/HRSG

DESCRIPTION: A natural gas-fired combustion turbine with a non-fired heat recovery steam generator (HRSG) nominally rated at 130 MW electrical output operating in combined-cycle mode.

Emission Units: EU-UNIT4

POLLUTION CONTROL EQUIPMENT: Dry low-NOx burners

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NOx	9 ppmv dry at 15% oxygen	24-hour rolling average as determined each hour the turbine operates	FG-UNIT4/HRSG	SC VI.2, SC VI.5	R 336.1205(1)(a) and (1)(b), R 336.2810, 40 CFR 52.21(j), 40 CFR 60.4320(a)
2. NOx	36.9 pph	24-hour rolling average as determined each hour the turbine operates	FG-UNIT4/HRSG	SC VI.2, SC VI.5	R 336.1205(1)(a) and (1)(b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j)
3. CO	0.048 lb/MMBtu heat input	24-hour rolling average as determined each hour the turbine operates	FG-UNIT4/HRSG	SC VI.2, SC VI.6	R 336.1205(1)(a) and (1)(b)
4. CO	53.6 pph	24-hour rolling average as determined each hour the turbine operates	FG-UNIT4/HRSG	SC VI.2, SC VI.6	R 336.1205(1)(a) and (1)(b), R 336.2804, 40 CFR 52.21(d)
5. CO	95.4 tpy	12-month rolling time period as determined at the end of each calendar month	FG-UNIT4/HRSG	SC VI.2, SC VI.6	R 336.1205(3), R 336.2804, 40 CFR 52.21(d)
6. PM10	0.0066 lb/MMBtu heat input	Test protocol will specify averaging time.	FG-UNIT4/HRSG	SC V.1	R 336.1205(1)(a) and (1)(b)
7. PM10	7.4 pph	Test protocol will specify averaging time.	FG-UNIT4/HRSG	SC V.1	R 336.1205(3), R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d)
8. PM2.5	0.0066 lb/MMBtu heat input	Test protocol will specify averaging time.	FG-UNIT4/HRSG	SC V.1	R 336.1205(1)(a) and (1)(b), R 336.2810, 40 CFR 52.21(j)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
9. PM2.5	7.4 pph	Test protocol will specify averaging time.	FG-UNIT4/HRSG	SC V.1	R 336.1205(1)(a) and (1)(b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j)
10. CO ₂ e	954 lb/MW-hr gross energy output	12-month rolling average as determined at the end of each calendar month	FG-UNIT4/HRSG	SC V.2, SC VI.4, SC VI.7	R 336.1205(1)(a) and (1)(b), R 336.2810, 40 CFR 52.21(j)

II. MATERIAL LIMITS

1. The permittee shall only combust pipeline quality natural gas in FG-UNIT4/HRSG. **(R 336.1205(1)(a) and (1)(b), R 336.1224, R 336.1702(a), R 336.1901, 40 CFR 60.4330)**
2. The permittee shall not combust more than 3,976 MMscf of natural gas per 12-month rolling time period as determined at the end of each calendar month in FG-UNIT4/HRSG. **(R 336.1205(1)(a) and (1)(b), R 336.1205(3), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j))**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate FG-UNIT4/HRSG unless a malfunction abatement plan (MAP) as described in Rule 911(2), has been submitted within 180 days of initial start-up, and 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 FG-UNIT4/HRSG unless the AQD District Supervisor has approved a plan that describes how emissions will be minimized during start-up 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 PARAMETERS

1. The permittee shall not operate FG-UNIT4/HRSG unless the dry low-NOx burners are installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with an approved MAP for FG-UNIT4/HRSG as required in SC III.2. **(R 336.1205(1)(a) and (1)(b), R 336.1224, R 336.1225, R 336.1901, R 336.1910, R 336.2810, 40 CFR 52.21(j))**

V. TESTING/SAMPLING

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

1. Within 180 days but no later than 12 months after commencement of initial start-up, verification of PM10 and PM2.5 emission rates from FG-UNIT4/HRSG at maximum routine operating conditions, by testing at owner's expense, in accordance with Department requirements, will be required. Testing shall consist of a minimum of two tests, one in the winter season and one in the summer season. The permittee must complete the testing once every five years, thereafter. No less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j))**
2. Within 180 days but no later than 12 months after commencement of initial start-up, verification of CO₂e emission rates and determination of the carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) fuel emission factors from FG-UNIT4/HRSG at maximum and average routine operating conditions, by testing at owner's expense, in accordance with Department requirements, will be required. The permittee must complete the testing once every five years, thereafter. No less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.2001, R 336.2003, R 336.2004, R 336.2810, 40 CFR 52.21(j))**

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 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j))**
2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the NOx and CO emissions, and oxygen (O₂) or carbon dioxide (CO₂) content of the exhaust gas from FG-UNIT4/HRSG on a continuous basis. The permittee shall install and operate the Continuous Emission Monitoring System and Continuous Emission Rate Monitoring System (CEMS/CERMS) to meet the timelines, requirements and reporting detailed in Appendix A. **(R 336.1205(1)(a) and (1)(b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j), 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 FG-UNIT4/HRSG on a continuous basis. The monitor shall be operated in

accordance with 40 CFR 60.4345(c). **(R 336.1205(1)(a) and (1)(b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j), 40 CFR 60.4345)**

4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the gross energy output from FG-UNIT4/HRSG on a continuous basis. **(R 336.1205(1)(a) and (1)(b), R 336.2810, 40 CFR 52.21(j))**
5. The permittee shall keep, in a satisfactory manner, 24-hour rolling average NO_x emission rate and mass emission records for FG-UNIT4/HRSG, 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) and (1)(b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j), 40 CFR 60.4345)**
6. The permittee shall keep, in a satisfactory manner, 24-hour rolling average and 12-month rolling time period CO emission rate and mass emission records for FG-UNIT4/HRSG, as required by SC I.3 and I.4. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) and (1)(b), R 336.1205(3), R 336.2804, 40 CFR 52.21(d))**
7. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling average CO₂e emission rate records for FG-UNIT4/HRSG, as required by SC I.10. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) and (1)(b), R 336.2810, 40 CFR 52.21(j))**
8. 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. Identification, type and the amounts of fuel combusted in FG-UNIT4/HRSG on a calendar month basis;
 - e. Gross energy output of FG-UNIT4/HRSG on a calendar month basis;
 - f. All records required by 40 CFR 60.7;
 - g. Records of the duration of all times FG-UNIT4/HRSG is operated under start-up 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 AQD District Supervisor and shall be consistent with the requirements of 40 CFR 60.7(f). **(R 336.1205(1)(a) and (1)(b), R 336.1205(3), R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1702(a), R 336.1901, R 336.1912, R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), and (j), 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 initial start-up of FG-UNIT4/HRSG. **(R 336.1201(7)(a))**

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. SV-BYPASS	177	101	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d)
2. SV-HRSG	213	140	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d)

IX. OTHER REQUIREMENTS

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 FG-UNIT4/HRSG. **(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
Continuous Emission Monitoring System and Continuous Emission Rate
Monitoring System (CEMS/CERMS) Requirements

1. Within 30 calendar days after commencement of initial start-up, the permittee shall submit two copies of a Monitoring Plan to the AQD, for review and approval. The Monitoring Plan shall include drawings or specifications showing proposed locations and descriptions of the required CEMS/CERMS.
2. Within 150 calendar days after commencement of initial start-up, the permittee shall submit two copies of a complete test plan for the CEMS/CERMS to the AQD for approval.
3. Within 180 calendar days after commencement of initial start-up, the permittee shall complete the installation and testing of the CEMS/CERMS.
4. Within 60 days of completion of testing, the permittee shall submit to the AQD two copies of the final report demonstrating the CEMS/CERMS complies with the requirements of the corresponding Performance Specifications (PS) in the following table:

Pollutant	Applicable PS*
NO _x	2
CO	4
CO ₂ /O ₂	3
CERMS	6
*Or other PS as approved by the AQD.	

5. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.
6. 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, 4, and 6 (see No. 4 above) of Appendix B to 40 CFR Part 60 or 40 CFR Part 75, Appendices A and B, as applicable.
7. 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).
8. 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.
9. 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.