

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

March 2, 2015

**PERMIT TO INSTALL**  
128-14A

**ISSUED TO**  
City of Marshall Electric Power Plant

**LOCATED AT**  
906 South Marshall Avenue  
Marshall, Michigan

**IN THE COUNTY OF**  
Calhoun

**STATE REGISTRATION NUMBER**  
C6230

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:

**February 10, 2015**

DATE PERMIT TO INSTALL APPROVED:

**March 2, 2015**

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
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 <sub>2</sub> 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 <sub>2</sub> 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 <sub>x</sub>	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 <sub>2</sub>	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)**

**EMISSION UNIT SUMMARY TABLE**

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

<b>Emission Unit ID</b>	<b>Emission Unit Description (Process Equipment &amp; Control Devices)</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EU-ENG-2	Nordberg engine and generator using No. 2 oil and natural gas. The unit is rated at 1130 KW.	1-1-53	FG-ENGINES2,3,4,5
EU-ENG-3	Fairbanks Morse engine and generator using No. 2 oil and natural gas. The unit is rated at 2070 KW.	9-20-73	FG-ENGINES2,3,4,5
EU-ENG-4	Nordberg diesel engine and generator. The unit fires only No. 2 fuel oil. The unit is rated at 1000 KW.	1-1-42	FG-ENGINES2,3,4,5
EU-ENG-5	Nordberg engine and generator using No. 2 oil and natural gas. The unit is rated at 1875 KW.	1-1-48	FG-ENGINES2,3,4,5
EU-ENG-6	A dual fuel Colt Pielstik engine and generator using ultra low sulfur diesel fuel and natural gas. The unit has a heat input capacity of 60.6 MMBtu/hour and is rated at 5711 KW.	1-1-78	NA
EU-FUELTANK1	20,000 gallon above ground No.2 fuel oil storage tank.	12-18-00/ no modifications	FG-FUELTANKS
EU-FUELTANK2	20,000 gallon above ground No.2 fuel oil storage tank.	12-18-00/ no modifications	FG-FUELTANKS
EU-FUELTANK3	20,000 gallon above ground No.2 fuel oil storage tank.	12-18-00/ no modifications	FG-FUELTANKS
EU-FUELTANK4	20,000 gallon above ground No.2 fuel oil storage tank.	12-18-00/ no modifications	FG-FUELTANKS

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.

**FLEXIBLE GROUP SUMMARY TABLE**

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

<b>Flexible Group ID</b>	<b>Flexible Group Description</b>	<b>Associated Emission Unit IDs</b>
FG-Engines3,5,6	Three engine and generator units sharing the same fuel restrictions, fuel sampling requirements, and recordkeeping requirements.	EU-ENG-3, EU-ENG-5, EU-ENG-6
FG-Engines2,4	Two engine and generator units sharing the same fuel restrictions, fuel sampling requirements, and recordkeeping requirements.	EU-ENG-2, EU-ENG-4
FG-FUELTANKS	Four 20,000 gallon above ground No.2 fuel oil storage tanks.	EU-FUELTANK1, EU-FUELTANK2, EU-FUELTANK3, EU-FUELTANK4

**The following conditions apply to: FG-Engines3,5,6**

**DESCRIPTION:** Three (3) dual fuel engine generators using ultra low sulfur diesel fuel (ULSD) and natural gas. These units have a total heat input capacity of 102.6 MMBtu/hour.

**Emission Units:** EU-ENG-3, EU-ENG-5, EU-ENG-6

**POLLUTION CONTROL EQUIPMENT:** Oxidation catalyst on each engine to control CO emissions.

**I. EMISSION LIMITS**

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NO <sub>x</sub>	89.6 tpy	12-month rolling time period	FG-Engines3,5,6	SC VI.1, SC VI.2, SC VI.5	R 336.1205(1)(a) & (3)
2. CO	9.7 tpy	12-month rolling time period	FG-Engines3,5,6	SC VI.1, SC VI.2, SC VI.5	R 336.1205(1)(a) & (3)

**II. MATERIAL LIMITS**

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. ULSD Fuel	15 ppm maximum sulfur content, as described in 40 CFR 80.510(b)	During all operations	FG-Engines3,5,6	SC VI.4	R 336.1205(1)(a) & (3)

**III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The fuel usage for FG-Engines3,5,6 shall not exceed 56,000 MMBtu per year (including ULSD and natural gas), based on a 12-month rolling time period basis as determined at the end of each calendar month. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.2804, R 336.2804, 40 CFR 52.21(c) & (d))**

**IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall equip and maintain FG-Engines3,5,6 with non-resettable hour meter to track the operating hours. **(R 336.1205(1)(a) & (3))**
2. The permittee shall not operate EU-ENG-3, EU-ENG-5, or EU-ENG-6 of FG-Engines3,5,6 unless a catalytic oxidation system is installed, maintained, and operated on each engine in a satisfactory manner. **(R 336.1205(1)(a) and (3), R 336.1910)**

**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 monitor and record the hours of operation of FG-Engines3,5,6, on a monthly and 12-month rolling time period basis, in a manner that is acceptable to the AQD District Supervisor. **(R 336.1205(3))**
2. The permittee shall monitor and record the higher heating value and fuel usage in units of MMBtu of ULSD and natural gas combusted in FG-Engines3,5,6, on a monthly and 12-month rolling time period basis, in a manner that is acceptable to the AQD District Supervisor. **(R 336.1205(3))**
3. The permittee shall continuously monitor and record the catalyst inlet temperature and pressure drop across the oxidation catalyst, when any engine in FG-Engines3,5,6 is operating. **(R 336.1205(1)(a) & (3))**
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 FG-Engines3,5,6 demonstrating that the fuel sulfur content meets the requirement of SC II.1. These records may include purchase records for ASTM specification ULSD, specifications or analyses provided by the vendor at the time of delivery, analytical results from laboratory testing, or any other records adequate to demonstrate compliance with the percent sulfur limit in the fuel. **(R 336.1205(1)(a) & (3))**
5. The permittee shall calculate and record, in a satisfactory manner, the NO<sub>x</sub> and CO emissions from FG-Engines3,5,6 on a monthly and 12-month rolling time period basis, in a manner that is acceptable to the AQD District Supervisor. **(R 336.1205(3))**

#### **VII. REPORTING**

NA

#### **VIII. STACK/VENT RESTRICTIONS**

The exhaust gases from each stack for FG-Engines3,5,6 shall be discharged unobstructed vertically upwards to the ambient air.

#### **IX. OTHER REQUIREMENTS**

1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart ZZZZ, for Stationary Reciprocating Internal Combustion Engines. **(40 CFR 63.6595, 40 CFR Part 63, Subparts A and ZZZZ)**

**The following conditions apply to: FG-Engines2,4**

**DESCRIPTION:** Two engine and generator units sharing the same fuel restrictions, fuel sampling requirements, and recordkeeping requirements.

**Emission Units:** EU-ENG-2, EU-ENG-4

**POLLUTION CONTROL EQUIPMENT:** NA

**I. EMISSION LIMITS**

NA

**II. MATERIAL LIMITS**

NA

**III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall only use No. 2 fuel oil and/or pipeline grade sweet natural gas in FG-Engines2,4. **(R 336.1205)**

**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. The permittee shall perform a fuel oil analysis once every 12 months of the density, Btu/gal or lb, and sulfur content by weight. ASTM D4057-88 and D129-91, ASTM D2622-92, ASTM D4294-90 or other EPA approved test method shall be used. **(R 336.1205, R 336.1225, R 336.1402)**

**VI. MONITORING/RECORDKEEPING**

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

1. The permittee shall record the monthly fuel oil usage rate, fuel oil Btu/lb value, and fuel oil sulfur content, by weight, for FG-Engines2,4. **(R 336.1205, R 336.1225, R 336.1402)**
2. The permittee shall maintain a complete record of fuel oil specifications and/or a fuel oil analysis for each delivery, or storage tank, of fuel oil. These records may include purchase records for ASTM specification fuel oil, specifications or analyses provided by the vendor at the time of delivery, analytical results from laboratory testing, or any other records adequate to demonstrate compliance with the percent sulfur limit in fuel oil. **(R 336.1205, R 336.1225, R 336.1402)**

**VII. REPORTING**

1. Within 30 days after completion of removing or rendering inoperable each engine of FG-Engines2,4, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. **(R 336.1201(7)(a))**

**VIII. STACK/VENT RESTRICTIONS**

NA

**IX. OTHER REQUIREMENTS**

1. The permittee shall remove FG-Engines2,4 from operation on or before May 1, 2015. To continue operation of FG-ENGINES2,4 at this site after this date, the permittee must apply for and receive a new PTI. **(R 336.1205(1)(a) & (3))**

**The following conditions apply to: FG-FUELTANKS**

**DESCRIPTION:** Four 20,000 gallon above ground No.2 fuel oil storage tanks.

**Emission Units:** EU-FUELTANK1, EU-FUELTANK2, EU-FUELTANK3, EU-FUELTANK4

**POLLUTION CONTROL EQUIPMENT:** NA

**I. EMISSION LIMITS**

NA

**II. MATERIAL LIMITS**

NA

**III. PROCESS/OPERATIONAL RESTRICTIONS**

NA

**IV. DESIGN/EQUIPMENT PARAMETERS**

NA

**V. TESTING/SAMPLING**

NA

**VI. MONITORING/RECORDKEEPING**

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

1. The permittee shall keep readily accessible records showing the dimensions of the storage tank and an analysis of the tank capacity. **(40 CFR Part 60 Subpart Kb, 60.116b(b))**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTIONS**

NA

**IX. OTHER REQUIREMENTS**

NA