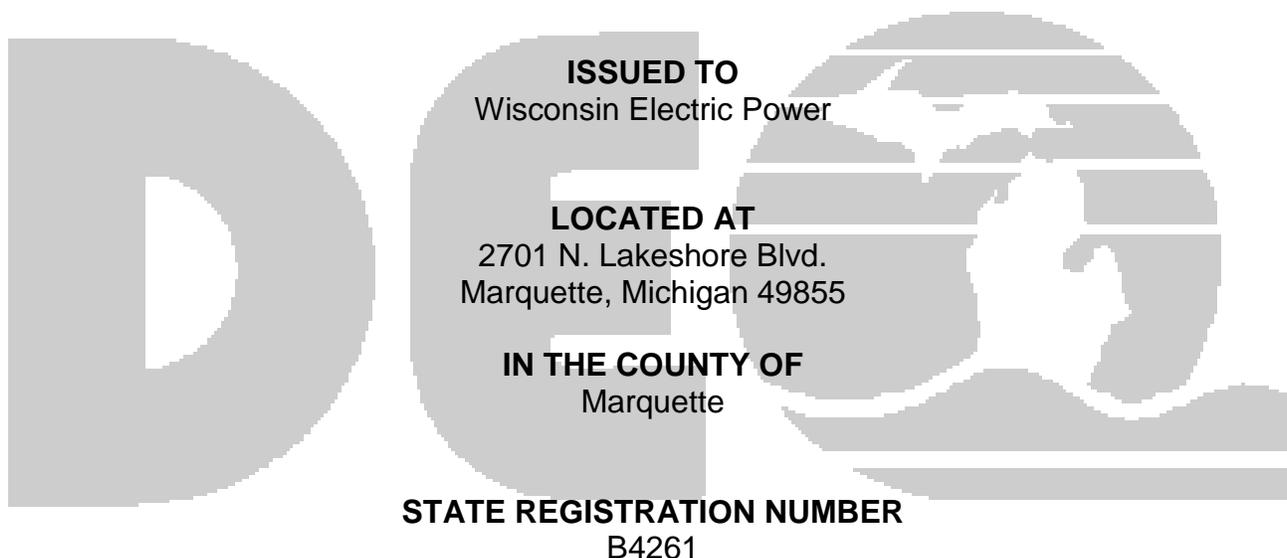


**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION**

February 3, 2009

**PERMIT TO INSTALL  
No. 387-08**



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: <b>1/29/2009</b>	
DATE PERMIT TO INSTALL APPROVED: <b>2/3/2009</b>	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

## PERMIT TO INSTALL

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**Common Abbreviations / Acronyms**

<b>Common Acronyms</b>		<b>Pollutant/Measurement Abbreviations</b>	
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 <sub>2</sub> 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 <sub>x</sub>	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality	PM	Particulate Matter
MIOSHA	Michigan Occupational Safety & Health Administration	PM10	PM less than 10 microns diameter
MSDS	Material Safety Data Sheet	PM2.5	PM less than 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 <sub>2</sub>	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, 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 AQD District Supervisor shall be notified, in writing, of a change in ownership or operational control of the stationary source or emission unit(s) authorized by this Permit to Install pursuant to R 336.1219. The notification shall include all of the information required by R 336.1219(1)(a) and (b). In addition, a new owner or operator must submit a written statement pursuant to R 336.1219(1)(c), agreeing to and accepting the terms and conditions of this Permit to Install, and shall notify the AQD District Supervisor of any change in the contact person for this Permit to Install. **(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.

<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>
EUBOILER7	A 1010 million BTU/hr coal-fired boiler with a steam capacity of 615,000 pph controlled by electrostatic precipitator and the TOXECON™ fabric filter baghouse common to Boilers #7 through #9	*	NA
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: EUBOILER7**

**DESCRIPTION:** Boiler (or Unit) #7 is a Riley pulverized coal wall fired dry bottom utility boiler which uses distillate oil start-up guns and periodically evaporates and combusts non-hazardous boiler cleaning liquids concurrently with coal firing. Nameplate steam capacity rating is 615,000 pounds per hour. The heat input capacity is approximately 1010 million BTU per hour. This boiler serves a GE steam turbine/generator set rated at 78,982 kilowatts. Bottom ash from Boilers No. 3 through No. 6 is permitted to be reburned in this boiler under Permit No. 299-01A.

**Flexible Group ID:**

**POLLUTION CONTROL EQUIPMENT:** Mercury emissions from Boilers #7, #8, and #9 are controlled with a TOXECON™ mercury control demonstration system installed in 2005. Included in this emission unit are an electrostatic precipitator and the TOXECON™ fabric filter baghouse common to Boilers #7 through #9.

**I. EMISSION LIMITS**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period/ Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring/ Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. <b>Nitrogen Oxides (NOx)</b>	0.70 lbs / MMBTU heat input <sup>2</sup>	3-Hour Average	EUBOILER7	VI. 4 Performance test established by 40 CFR 60.8	40 CFR Part 60 Subparts A & D
2. <b>Particulate Matter (PM)</b>	a. 0.10 lb / MMBTU heat input <sup>2</sup>	a. Test Protocol	EUBOILER7	a. GC 13, 14, 15	a. R 336.1331 40 CFR Part 60 Subparts A & D
	b. 0.030 lb of filterable PM per MMBTU excluding back-half	b. Test Protocol		b. VII.5	b. Civil Action No. 03-C-0371 Paragraph 89

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
3. <b>Sulfur Oxides (SOx)</b>	1.2 lbs / MMBTU heat input <sup>2</sup>	3-Hour Average	EUBOILER7	VI. 4 Performance test established by 40 CFR 60.8	40 CFR Part 60 Subparts A & D
4. <b>Visible Emissions</b>	20% opacity, except as specified in 40 CFR Part 60 Subparts A & D <sup>2</sup>	Test Protocol	EUBOILER7	GC 11, 40 CFR Part 60 Subparts A & D	R 336.1301, 40 CFR Part 60 Subparts A & D
* As specified in Rule 801(2), this plant-wide average shall include all permittee's fossil fuel-fired, electricity-generating utility units which have the potential to emit more than 25 tons of oxides of nitrogen each ozone control period and which serve a generator that has a nameplate capacity of 25 megawatts or more.					

**II. MATERIAL LIMITS**

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall not burn coal in EUBOILER7 having a sulfur content greater than any amount authorized by regulation or state permit and shall not receive petroleum coke at any Unit that is not controlled by a Flue Gas Desulfurization System (FGD) or equivalent SO<sub>2</sub> technology. (Civil Action No. 03-C-0371 Paragraph 85)
2. During the trial burn, the permittee shall not reburn in EUBOILER7 more than 4.5 tons of high carbon fly ash per hour from Boilers #5 and #6.<sup>2</sup> (R 336.1201(3), R336.1225, R336.1331)
3. During the trial burn, the permittee shall not reburn in EUBOILER7 more than 250 tons of high carbon fly ash from Boilers #5 and #6.<sup>2</sup> (R 336.1201(3), R336.1225, R336.1331)

**III. PROCESS OR OPERATIONAL RESTRICTIONS**

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall not operate EUBOILER7 unless the associated electrostatic precipitator (ESP) is operating properly.<sup>2</sup> (R 336.1201(3))
2. The permittee shall use either low NOx burners (LNB) or combustion control technology when operating EUBOILER7. (Civil Action No. 03-C-0371 Paragraph 61)

**IV. DESIGN OR EQUIPMENT PARAMETERS**

1. NA

**V. TESTING AND SAMPLING**

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. Within three years of the effective date of this permit, the permittee shall conduct PM testing of EUBOILER7 to determine compliance with the emission limit specified in Special Condition I.2a. (R 336.1201(3))
2. The permittee shall conduct an annual PM stack test on SVFLUE7 to show compliance with the PM emission limit specified in Special Condition I.2b. The annual stack test requirement may be satisfied by the permittee's stack tests required in the year as stated in Special Condition V.1. The permittee may perform biennial rather than annual testing provided that one of the following are met:
  - a. Two of the most recently completed test results conducted in accordance with Method 5 or Method 17 demonstrate that the PM emissions are equal to or less than 0.015 lb/MMBTU; or

b. EUBOILER7 is equipped with a PM CEMS.

The permittee shall perform annual rather than biennial testing the year immediately following any test result demonstrating that the PM emissions are greater than 0.015 lb/MMBTU. **(Civil Action No. 03-C-0371 Paragraph 91)**

3. During the trial burn using high carbon fly ash from Boiler Nos. 5 and 6, the permittee shall verify PM, arsenic, barium, beryllium, cadmium, chromium, lead, manganese, mercury and nickel emission rates from EUBOILER7 by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall 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, R 336.1224, R 336.1225, R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**
4. During the trial burn using high carbon fly ash from Boiler Nos. 5 and 6, the permittee shall analyze the fly ash fuel and the coal fuel for arsenic, barium, beryllium, cadmium, chromium, lead, manganese, mercury and nickel; percent sulfur content; ash content and heating value in BTU fired in EUBOILER7. **(R 336.1201, R336.1225)**

## **VI. MONITORING AND RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

### **OPACITY MONITORING**

1. The permittee shall calibrate, monitor, and record visible emissions on a continuous basis, with certified instrumentation, and in a manner acceptable to the Air Quality Division.<sup>2</sup> **(R 336.1201(3), 40 CFR 60.13, 40 CFR Part 60 Appendix B Performance Specification 1)**
2. Within 30 days following the end of each calendar quarter, the permittee shall submit an excess emissions report (EER).<sup>2</sup> **(R 336.1201(3), 40 CFR 60.7 (c) and (d))**
3. The permittee shall perform an annual audit of the COMS, and shall submit a copy of it to the Air Quality Division within 30 days following the end of the calendar quarter in which the audit was conducted.<sup>2</sup> **(R 336.1201(3), USEPA Publication 450/4-92-010 Performance Audit Procedures for Opacity Monitors)**

### **GASEOUS EMISSIONS MONITORING**

4. The permittee shall calibrate, monitor, and record SO<sub>2</sub> and NO<sub>x</sub> emissions on a continuous basis, with certified instrumentation, and in a manner acceptable to the Air Quality Division.<sup>2</sup> **(R 336.1201(3), 40 CFR 60.13, 40 CFR Part 60 Appendix B Performance Specification 2, 40 CFR Part 75, R 336.1801)**
5. For the three-hour average SO<sub>2</sub> and NO<sub>x</sub> emission limits specified under EMISSION LIMITS above, excess emissions are defined as any three-hour period during which the average emissions (arithmetic average of the three contiguous one-hour periods as measured by the continuous monitoring system) exceed the emission limit.<sup>2</sup> **(R 336.1201(3), 40 CFR 60.45(g)(2) and (3))**
6. Within 30 days following the end of each calendar quarter, the permittee shall submit an excess emissions report (EER) for SO<sub>2</sub> and NO<sub>x</sub>.<sup>2</sup> **(R3236.1201(3), 40 CFR 60.7(c) and (d), 40 CFR Part 75)**
7. The permittee shall perform and report Quality Assurance Procedures of the CEMS and submit it to the Air Quality Division in a format of the data assessment report (DAR) along with the quarterly EER and summary reports.<sup>2</sup> **(R 336.1201(3), 40 CFR Part 60 Subparts A and D and Appendix F, 40 CFR Part 75)**

### **OTHER MONITORING OR RECORDKEEPING**

8. The permittee shall maintain records of emissions and operating information including NO<sub>x</sub> emissions, SO<sub>2</sub> emissions or sulfur content of the fuel, rate of fuel burned, heating value, ash content, average electrical output, and minimum and maximum hourly generation rate. See Appendix 4.<sup>2</sup> **(40 CFR Part 60 Subparts A and D, 40 CFR Part 75)**

9. During the trial burn using high carbon fly ash from Boiler Nos. 5 and 6, the using permittee shall record the usage rate of fly ash fired on a daily and monthly basis and total hours fired in EUBOILER7 in a format acceptable and approved by the District Supervisor, AQD. **(R 336.1201, R 336.1205(3))**

## **VII. REPORTING**

1. Within 60 days after the end of each ozone control period, the permittee shall submit a summary report in an acceptable format including all of the information specified in Rule 801(12).<sup>1</sup> **(R 336.1801)**
2. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. See Appendix 8. **(R 336.1213(3)(c)(ii))**
3. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. See Appendix 8. Report shall be postmarked or received by appropriate AQD district office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
4. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. See Appendix 8. Report shall be postmarked or received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
5. The reference and monitoring methods and procedures for determining compliance with the emission limits for PM shall be those specified in 40 CFR Part 60, Appendix A, Method 5 or Method 17. Use of any particular method shall conform to the EPA requirements specified in 40 CFR Part 60, Appendix A and 40 CFR 60.48a (b) and (e), or federally approved SIP method. The permittee shall calculate the PM emission rates from the stack test results in accordance with 40 CFR 60.8(f) and 40 CFR 60.46a (c). The results of each PM stack test shall be submitted to the EPA and the MDEQ within 45 days of the completion of each test. **(Civil Action No. 03-C-0371 Paragraph 92)**
6. The permittee shall submit a Notification of Intent to conduct a trial burn to the District Supervisor, in writing, at least five days before the trial burn is scheduled to begin. **(R336.1201, R 336.1205(3), R 336.1225)**
7. All stack test and sampling results high carbon fly ash usage fired in EUBOILER7 shall be submitted to the AQD in an acceptable format within 60 days following the date of trial burn completion. **(R 336.1201, R 336.1205(3), R 336.1225)**

## **VIII. STACK OR 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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Diameter (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVFLUE7	114 <sup>1</sup>	410 <sup>1</sup>	R 336.1201(3)

## **IX. OTHER REQUIREMENTS**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall implement the *Compliance Assurance Monitoring (CAM)* plan submitted for particulate in conformance with 40 CFR Part 64. **(40 CFR Part 64)**
2. As would apply to any other condition in this permit, nothing in this permit shall preclude the use, including exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.<sup>2</sup> **(40 CFR 60.11(g))**

**PHASE II ACID RAIN PERMIT**

3. The permittee shall comply with the acid rain permitting provisions of 40 CFR 72.1 to 72.94 as outlined in a complete *Phase II Acid Rain Permit* issued by the Air Quality Division. **Phase II Acid Rain Permit No. MI-AR-1769-2007** is hereby incorporated into this Renewable Operating Permit as Appendix 9. **(R 336.1299(d))**
4. The permittee shall not allow the emission of an air pollutant to exceed the amount of any emission allowances that an affected source lawfully holds as of the allowance transfer deadline pursuant to R 336.1299(d) and 40 CFR 72.9(c)(1)(i). **(R 336.1213(10))**
5. This permit becomes void within three months of the issuance of this permit. **(R 336.1205(3))**

**Footnotes:**

<sup>1</sup>This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).