

APPENDIX C
SUMMARY - ANALYSIS OF DTE RIVER ROUGE AND
TRENTON CHANNEL SO₂
30-DAY AVERAGE HOURLY TO 1-HR EMISSION LIMITS

USEPA 1-hour SO₂ nonattainment area SIP guidance allows states to approve emission limits with up to 30-day averaging times if a demonstration is provided showing that the longer term average limits are as stringent as the associated 1-hour limits determined by modeling analysis.

The first step in USEPA's suggested analysis approach is to determine a "critical emission value" for each emission source which is the 1-hr emission rate at which compliance with the 1-hr SO₂ NAAQS is predicted with modeling. Statistical analysis is then applied to sets of CEMS data representative of future emissions for each source to compare the 1-hr emission data with longer-term average emission rates developed from the same CEMS data sets. The statistical analysis determines a ratio that represents the relationship between a short term and a longer term emission limit for the source. USEPA guidance recommends analysis based on the highest emission rates (highest 1%) in the emission sets in order to best represent situations most likely to exceed emission limits and cause higher ambient impacts. Therefore, ratios of 99th percentiles of 30-day average hourly emission rate/1-hour emission rate are determined using statistical analyses. Ratios determined in this manner can then be applied to the "critical emission values" to determine 30-day average hourly emission limits with comparable stringency to the 1-hour limits determined by modeling.

As an example, USEPA review of 315 electric generating unit (EGU) sources in their Clean Air Markets Division database with "no advanced SO₂ control equipment" resulted in an average 0.79 ratio of 30-day average/1-hour average 99th percentile emission rates. This ratio would translate to setting a 30-day average hourly emission limit about 21% lower than a 1-hour limit for a typical source to achieve a limit with comparable stringency.

DTE submitted a demonstration supporting 30-day average emission limits for their River Rouge and Trenton Channel plants using a demonstration approach somewhat similar to that recommended in the USEPA guidance. USEPA guidance does allow for use of demonstration methods that do not strictly adhere to the USEPA approach. DTE believes their analysis approach best reflects their control strategy to reduce SO₂ emissions by increasing their western /eastern coal blend percentage.

More specifically, the DTE analysis employed CEMS heat input data and SO₂ emission factors based on past and projected future western/eastern coal blends to determine "Adjusted SO₂" emission rates. The SO₂ emission factors were determined by DTE from plots of their past SO₂ emission rates in lb SO₂/MMBtu vs. monthly percent western coal. The projected future western coal percentages were then used to calculate future SO₂ emission factors for each EGU.

DTE then determined the ratios of 30-day average hourly/1-hour 99th percentile emission rates for their River Rouge Unit 2 (0.85), River Rouge Unit 3 (0.85), and Trenton Channel Unit 9A (0.87) EGUs. The AQD applied these ratios to 30-day average emission limits requested by DTE to determine the associated "critical emission value" for each EGU. The AQD checked the DTE 99th percentile ratio calculations using the DTE CEMS data and the DTE calculation approach and confirmed the 0.85 ratios for the River Rouge Unit 2 and Unit 3 EGUs; however, the AQD result for Trenton Channel Unit 9A was slightly higher at 0.89 compared to the 0.87 ratio computed by DTE. The "critical emission values" were then remodeled by the AQD for each EGU to determine revised individual hotspot and combined hotspot SO₂ impact estimates for use in setting emission limits in the two pending River Rouge and Trenton Channel permit to install applications.

APPENDIX D
CARMEUSE PERMIT TO INSTALL 193-14A

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

March 18, 2016

PERMIT TO INSTALL
193-14A


ISSUED TO
Carmeuse Lime & Stone

LOCATED AT
25 Marion Avenue
River Rouge, Michigan

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
B2169

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: March 8, 2016	
DATE PERMIT TO INSTALL APPROVED: March 18, 2016	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 ₂ e	Carbon Dioxide Equivalent	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H ₂ S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
GHGs	Greenhouse Gases	kW	Kilowatt
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	NO _x	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality (Department)	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM10	PM with aerodynamic diameter ≤10 microns
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM2.5	PM with aerodynamic diameter ≤ 2.5 microns
NSPS	New Source Performance Standards	pph	Pounds per hour
NSR	New Source Review	ppm	Parts per million
PS	Performance Specification	ppmv	Parts per million by volume
PSD	Prevention of Significant Deterioration	ppmw	Parts per million by weight
PTE	Permanent Total Enclosure	psia	Pounds per square inch absolute
PTI	Permit to Install	psig	Pounds per square inch gauge
RACT	Reasonably Available Control Technology	scf	Standard cubic feet
ROP	Renewable Operating Permit	sec	Seconds
SC	Special Condition	SO ₂	Sulfur Dioxide
SCR	Selective Catalytic Reduction	THC	Total Hydrocarbons
SRN	State Registration Number	tpy	Tons per year
TAC	Toxic Air Contaminant	µg	Microgram
TEQ	Toxicity Equivalence Quotient	VOC	Volatile Organic Compound
VE	Visible Emissions	yr	Year

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

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**

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

SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

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

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EUKILNNUMBER1	Horizontal rotary lime kiln identified as Kiln No. 1. The kiln is 300 feet long with a 10.6 foot diameter. Exhaust from the kiln is vented through a positive pressure reverse air baghouse with a monovent-type ambient discharge.	1/1/1968	FG-MACT-AAAAA-LIME MANUFACTURING PLANTS, FG-KILNS1&2
EUKILNNUMBER2	Horizontal rotary lime kiln identified as Kiln No. 2. The kiln is 300 feet long with a 10.6 foot diameter. Exhaust from the kiln is vented through a positive pressure reverse air baghouse with a monovent-type ambient discharge.	1/1/1968	FG-MACT-AAAAA-LIME MANUFACTURING PLANTS, FG-KILNS1&2
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.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-KILNS1&2	As part of the 1-hour SO ₂ Non-attainment SIP development, Carmeuse is constructing a new stack which will exhaust combine emissions from the two (2) kilns and establish a new SO ₂ emission rate for the combined exhaust.	EUKILNNUMBER1, EUKILNNUMBER2

The following conditions apply to: FG-KILNS1&2

DESCRIPTION: As part of the 1-hour SO₂ nonattainment SIP development, Carmeuse is constructing a new stack which will exhaust combine emissions from the two (2) kilns and establish a new SO₂ emission rate for the combined exhaust.

Emission Units: EUKILNNUMBER1, EUKILNNUMBER2

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

Pollutant	Limit*	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. SO ₂	470 pph	Hourly	FG-KILNS1&2	SC. V.1, VI.1, VI.2	R 336.2804, 40 CFR 52.21(d), Section 110 CAA

*On and after October 1, 2018, the permittee shall compile hourly SO₂ emission rate calculations. The emission rate shall be determined on a 1-hour average, starting on the hour for each clock-hour, by applying an emission factor to the limestone feed rate. See method below:

$$\text{SO}_2 \text{ Emission Rate (pph)} = [(\text{EUKILNNUMBER1} + \text{EUKILNNUMBER2 total Limestone Feed Rate (tons/hr)}) * \text{SO}_2 \text{ Emission Factor (lbs SO}_2\text{/ton limestone feed)}]$$

Where:

Limestone Feed Rate (tons/hr) = recorded hourly limestone feedrate to both kilns

SO₂ Emission Factor (lbs/ton) = 2.15 lbs SO₂/ton limestone

The emission factor of 2.15 lbs SO₂/ton limestone shall be updated using the most recent stack test results, as required in SC V.1, after approval by the AQD, and the limestone feed rate shall be monitored and recorded hourly.

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

1. No later than April 1, 2019, the permittee shall determine an emission rate for SO₂ from FG-KILNS1&2 by testing at owner's expense, in accordance with Department requirements. The results of the stack test shall be used in the determination of a SO₂ emission factor in pounds per ton of limestone feed. 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. Subsequent compliance testing shall be conducted no less than every five years for the purpose of updating the SO₂ emission factor. 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 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 (d), Section 110 of CAA)**

VI. MONITORING/RECORDKEEPING

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

1. On and after October 1, 2018, the permittee shall calculate and record the average hourly SO₂ emission rate from FG-KILNS1&2, determined by applying the most current emission factor to the hourly limestone feed rate data, as specified in SC I.1. The permittee shall keep the records on file at the facility for a period of five years, in a format acceptable to the AQD, and make them available to the department upon request. **(R 336.2804, 40 CFR 52.21 (d), Section 110 of CAA)**
2. On and after October 1, 2018, the permittee shall continuously monitor and record, in a method acceptable to the department, the total hourly limestone feed rates from each kiln in FG-KILNS1&2. The permittee shall keep the records on file at the facility for a period of five years, in a format acceptable to the AQD, and make them available to the department upon request. **(R 336.2804, 40 CFR 52.21 (d), Section 110 of CAA)**

VII. REPORTING

1. On and after March 1, 2019, the company shall submit an excess emission report, for FG-KILNS1&2, in an acceptable format to the department within 30 days following the end of each calendar 6-month period. The excess emission report shall include the following information:
 - a) A report of each exceedance above the SO₂ limitation. This includes the date, time, magnitude, cause and corrective actions for all occurrences during the reporting period.
 - b) A report of all periods of limestone feed rate monitoring system downtime and corrective action.
 - c) If no SO₂ limitation exceedances and no limestone feed rate monitoring system downtime occurred during the reporting period, the company shall report that fact.**(R 336.2804, 40 CFR 52.21(d), Section 110 CAA)**
2. No later than January 1, 2018, the permittee shall begin installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install. Within 30 days, but no later than October 1, 2018, 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. **(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. SVKILN1&2	108	120	R 336.2804, 40 CFR 52.21(d), Section 110 CAA

IX. OTHER REQUIREMENTS

NA

**APPENDIX E
FINAL RULE 430**

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

PART 4. EMISSION LIMITATIONS AND PROHIBITIONS – SULFUR-BEARING COMPOUNDS

Filed with the Secretary of State on June 14, 2016.

These rules become effective immediately upon filing with the Secretary of State unless adopted under section 33, 44, or 45(a) of the 1969 PA 306. Rules adopted under these sections become effective 7 days after filing with the Secretary of State.

(By authority conferred on the director of the Department of Environmental Quality by sections 5503 and 5512 of 1994 PA 451, MCL 324.5503 and 324.5512.

R 336.1430 is added to the Michigan Administrative Code.

R 336.1430 Emission of SO₂ from United States Steel, Great Lakes Works.

Rule 430. (1) The provisions in this rule supersede the requirements of R 336.1407 that apply to United States Steel, Great Lakes Works reheat furnaces and Zug Island boilers as referenced in subrules (2) and (3) of this rule.

(2) All of the following apply to United States Steel, Great Lakes Works, 80" hot strip mill reheat furnaces:

(a) On and after December 31, 2016, the combined SO₂ emission rate from the 5 reheat furnaces shall not exceed 148 pounds per hour, based on a 1-hour average starting on the hour for each clock-hour.

(b) On and after December 31, 2016, the company shall install, calibrate, maintain, and operate in a manner approved by the department devices to separately monitor and record the coke oven gas and natural gas usage rates, in cubic feet per hour, for the 5 reheat furnaces combined for each hour of operation. The 5 furnaces shall be equipped with a common coke oven gas usage meter and a common natural gas usage meter. The company shall keep the usage rate records on file at the facility for a period of 5 years, in a format acceptable to the department, and make them available to the department upon request.

(c) On and after December 31, 2016, the company shall compile hourly SO₂ emission rate calculations for the 5 reheat furnaces combined in pounds per hour, for each hour of operation. Emission rates shall be determined using the method specified in subrule (3)(g) of this rule. The company shall keep the records of the calculations on file at the facility for a period of 5 years, in a format acceptable to the department, and make them available to the department upon request.

(d) Not later than June 30, 2017, the company shall conduct SO₂ emission stack tests of the reheat furnaces, based on testing of a representative furnace. Not less than 30 days before testing, a complete stack test protocol shall be submitted to the department for approval. The final plan must be approved by the department before testing. Verification of emission rates includes the submittal of a complete report of the test results to the department within 60 days following the last date of the test. The company shall keep the records of the test on file at the facility for a period of 5 years, in a format acceptable to the department, and make them available to the department upon request.

(e) On and after September 15, 2017, the company shall submit an excess emission report in an acceptable format to the department semiannually. The report shall be submitted by

September 15 for the January 1 to June 30 reporting period, and by March 15 for the July 1 to December 31 reporting period. The excess emission report shall include the following information:

(A) A report of each exceedance above the SO₂ limitation including the date, time, magnitude, cause, and corrective actions for all occurrences during the reporting period.

(B) A report of all periods of fuel gas usage rate monitoring system downtime and corrective action.

(C) If no SO₂ limitation exceedance and no fuel gas usage rate monitoring system downtime occurred during the reporting period, the company shall report that fact.

(3) All of the following apply to United States Steel, Great Lakes Works, Zug Island boiler houses number 1 and 2:

(a) The following limits shall be met on and after December 31, 2016:

(i) The combined SO₂ emission rate from the number 1 boiler house boilers 1 to 5 shall not exceed 15 pounds per hour, based on a 1-hour average starting on the hour for each clock-hour.

(ii) The combined SO₂ emission rate from the number 2 boiler house boilers 1 to 5 shall not exceed 21 pounds per hour, based on a 1-hour average starting on the hour for each clock-hour.

(iii) The maximum hydrogen sulfide content of the blast furnace gas fired in the boilers shall not exceed .0274 grains per dry standard cubic foot, based on a 1-hour average starting on the hour for each clock-hour.

(b) The type of fuels burned in the boilers shall be restricted to blast furnace gas, coke oven gas, and natural gas.

(c) On and after December 31, 2016, the company shall install, calibrate, maintain, and operate in a manner approved by the department devices to separately monitor and record the coke oven gas, blast furnace gas, and natural gas usage rates in cubic feet per hour for the combined number 1 boiler house boilers and for the combined number 2 boiler house boilers for each hour of operation. The company shall keep the usage rate records on file at the facility for a period of 5 years, in a format acceptable to the department, and make them available to the department upon request.

(d) On and after December 31, 2016, the company shall install, calibrate, maintain, and operate in a manner approved by the department devices to monitor and record the blast furnace gas hydrogen sulfide content in grains per cubic foot for the blast furnace gas fired in the number 1 boiler house boilers 1 to 5 and in the number 2 boiler house boilers 1 to 5 on a continuous basis to determine the 1-hour average hydrogen sulfide concentration in the blast furnace gas for each hour of operation. The company shall keep the records of the hydrogen sulfide content on file at the facility for a period of 5 years, in a format acceptable to the department, and make them available to the department upon request.

(e) On and after December 31, 2016, the company shall compile hourly SO₂ emission rate calculations separately for the combined number 1 boiler house boilers 1 to 5 and for the combined number 2 boiler house boilers 1 to 5 for each hour of operation. Emission rates shall be determined using the method specified in subdivision (g) of the subrule. The company shall keep the calculation records on file at the facility, for a period of 5 years, in a format acceptable to the department, and make them available to the department upon request.

(f) On and after September 15, 2017, the company shall submit an excess emission report in an acceptable format to the department semiannually. The report shall be submitted by September 15 for the January 1 to June 30 reporting period, and by March 15 for the July 1 to December 31 reporting period. The excess emission report shall include the following information:

(i) A report of each exceedance above the SO₂ and/or hydrogen sulfide limitations including the date, time, magnitude, cause, and corrective actions for all occurrences during the reporting period.

(ii) A report of all periods of fuel gas usage rate monitoring system and/or fuel gas hydrogen sulfide monitoring system downtime and corrective action.

(iii) If no SO₂ and/or hydrogen sulfide limitation exceedances, no fuel gas usage rate monitoring system downtime, or no fuel gas hydrogen sulfide monitoring system downtime occurred during the reporting period, the company shall report that fact.

g) The company shall determine the average hourly SO₂ emission rate for the group of 5 furnaces or boilers grouped as number 1 boiler house or number 2 boiler house boilers subject to subrule (2) or (3) of this rule as specified below or by a method approved by the department as required in subrule (4) of this rule:

$$\text{HOURLY RATE (lbs SO}_2\text{/hour)} = [\text{COG (1000 ft}^3\text{/hour)} * (0.702 \text{ lbs SO}_2\text{ / 1000 ft}^3) + \text{BFG (ft}^3\text{/hr)} * \text{H}_2\text{S (gr/ft}^3\text{ BFG)} * (1 \text{ lb H}_2\text{S / 7,000 gr H}_2\text{S)} * (1.88 \text{ lb SO}_2\text{/lb H}_2\text{S)} + \text{NG (1,000,000 ft}^3\text{/hr)} * (0.6 \text{ lb SO}_2\text{ / 1,000,000 ft}^3)]$$

Where:

HOURLY RATE = boiler house group or furnace group emission rate (lbs SO₂/hour).

COG = actual volume of coke oven gas consumed (1000 ft³ per clock-hour) in a furnace group or boiler house group.

BFG = actual volume of blast furnace gas consumed (ft³ per clock-hour) in a furnace group or boiler house group.

NG = actual volume of natural gas consumed (1,000,000 ft³ per clock-hour) in a furnace group or boiler house group.

H₂S = actual concentration of hydrogen sulfide in BFG (gr/ft³) determined on a 1-hour average basis for each clock-hour of operation.

(h) Not later than June 30, 2017, the company shall conduct SO₂ emission stack tests of a representative boiler in number 1 boiler house and of a representative boiler in number 2 boiler house. Not less than 30 days before to testing, a complete stack test protocol must be submitted to the department for approval. The final plan must be approved by the department before testing. Verification of emission rates includes the submittal of a complete report of the test results to the department within 60 days following the last date of the test. The company shall keep the records of the test on file at the facility for a period of 5 years, in a format acceptable to the department, and make them available to the department upon request.

(4) The emission rate limits in subrules (2)(a) and (3)(a) of this rule, or equivalent limits as determined by dispersion modeled SO₂ impacts, may be met with several different control methods including sulfur dioxide flue gas emission controls, blending of alternate lower sulfur content fuels with currently used fuels, application of fuel desulfurization control to the currently used coke oven gas and blast furnace gas, use of improved dispersion techniques such as use of taller exhaust stacks, or a combination of these and/or other control measures. By August 31, 2016, the company shall submit to the MDEQ for approval the control methods, control efficiencies as appropriate, and associated testing, recordkeeping and reporting methods that the company will use to comply with this rule.



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
LANSING

MIKE ZIMMER
DIRECTOR

March 24, 2016

Joint Committee on Administrative Rules
Boji Tower; 4th Floor - 124 W. Allegan
P.O. 30036
Lansing, Michigan 48909-7536

Dear JCAR Staff:

On behalf of the Office of Regulatory Reinvention, I hereby submit the following rule set for consideration by the Joint Committee on Administrative Rules:

(2014-024 EQ) Part 4. Emissions Limitations and Prohibitions - Sulfur-Bearing Compounds

Enclosed, you will find copies of the following:

1. 1 copy of the RFR.
2. 1 copy of the LSB formal certificate.
3. 1 copy of the ORR formal certificate.
4. 1 copy of the Regulatory Impact Statement.
5. 1 copy of the draft rules.
6. 1 copy of the JCAR Agency Report.

Please let me know if you have any questions. I can be reached at 241-1671.
Thanks.

Sincerely,

Deidre O'Berry
Office of Regulatory Reinvention

enclosures



Since 1941

THIS COPY TO BE FILED
WITH
SECRETARY OF STATE

Legal Division

John C. Bollman, Director

CERTIFICATE OF APPROVAL

I hereby certify that the Legislative Service Bureau has examined the attached proposed rule of the Department of Environmental Quality, dated March 11, 2016, adding R 336.1430 to the Department's rules entitled "Part 4. Emission Limitations and Prohibitions – Sulfur-Bearing Compounds," and further certify that, pursuant to section 45 of 1969 PA 306, MCL 24.245, the Legislative Service Bureau approves the rule as to form, classification, and arrangement.

Dated: March 24, 2016

LEGISLATIVE SERVICE BUREAU

By Marge Martin
Marge Martin,
Michigan Law Compiler



STATE OF MICHIGAN
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
LANSING

RICK SNYDER
GOVERNOR

MIKE ZIMMER
DIRECTOR

LEGAL CERTIFICATION OF RULES

I certify that I have examined the attached administrative rules, dated March 11, 2016, in which the Department of Environmental Quality proposes to modify a portion of the Michigan Administrative Code entitled, "**Part 4. Emissions Limitations and Prohibitions - Sulfur-Bearing Compounds**" by:

- ◆ Adding R 336.1430.

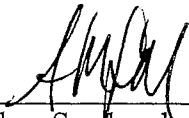
The Legislative Service Bureau has approved the proposed rules as to form, classification, and arrangement.

I approve the rules as to legality pursuant to the Administrative Procedures Act, MCL 24.201 *et seq.* and Executive Order No. 2005-1. In certifying the rules as to legality, I have determined that they are within the scope of the authority of the agency, do not violate constitutional rights, and are in conformity with the requirements of the Administrative Procedures Act.

Dated: 3-24-16

Office of Regulatory Reinvention

By: _____


Adam Sandoval,
Administrative Law Specialist



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
LANSING

SHELLY EDGERTON
DIRECTOR

June 14, 2016

The Honorable Ruth Johnson
Secretary of State
Office of the Great Seal
Richard H. Austin Building – 1st Floor
430 W. Allegan
Lansing, MI 48909

Dear Secretary Johnson:

Re: Administrative Rules – Department of Licensing and Regulatory Affairs
Office of Regulatory Reinvention # 2014-024 EQ

On June 14, 2016, the Office of Regulatory Reinvention received administrative rules for the Department of Environmental Quality “**Part 4. Emission Limitations and Prohibitions – Sulfur-Bearing Compounds**” as adopted by the agency on March 28, 2016. We are transmitting these rules to you pursuant to the requirements of Section 46 of Act No. 306 of the Public Acts of 1969, being MCL 24.246, and paragraph 16 of Executive Order 1995-6.

Sincerely,

A handwritten signature in black ink, appearing to read "Deidre O'Berry", with a long horizontal flourish extending to the right.

Deidre O’Berry - Rules Specialist
Office of Regulatory Reinvention
Department of Licensing and Regulatory Affairs



STATE OF MICHIGAN
RUTH JOHNSON, SECRETARY OF STATE
DEPARTMENT OF STATE
LANSING

June 14, 2016

NOTICE OF FILING

ADMINISTRATIVE RULES

To: Secretary of the Senate
Clerk of the House of Representatives
Joint Committee on Administrative Rules
State Office of Regulatory Reinvention (Administrative Rule #2014-024-EQ)
Legislative Service Bureau (Secretary of State Filing #16-06-03)
Department of Environmental Quality

In accordance with the provisions of Section 46(1) of Act 306, Public Acts of 1969, as amended, and Executive Order 1995-6, this is to advise you that the Michigan Department of Licensing and Regulatory Affairs and the State Office of Regulatory Reinvention filed Administrative Rule #2014-024-EQ (Secretary of State Filing #16-06-03) on this date at 3:15 P.M. for the Department of Environmental Quality entitled, "Part 4. Emission Limitations and Prohibitions – Sulfur-Bearing Compounds".

These rules become effective immediately upon filing with the Secretary of State unless adopted under sections 33, 44 or 45a (6) of 1969 PA 306. Rules adopted under these sections become effective 7 days after filing with the Secretary of State.

Sincerely,

Ruth Johnson
Secretary of State

A handwritten signature in cursive script that reads "Robin Houston/b".

Robin L. Houston, Departmental Supervisor
Office of the Great Seal

Enclosure

APPENDIX F
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
Air Quality Division
NOTICE OF PUBLIC HEARING

The Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), will conduct a comment period and public hearing on a proposed administrative rule promulgated pursuant to Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). This rule is identified as R 336.1430. This rule is intended to reduce the emissions of sulfur dioxide from U.S. Steel, Great Lakes Works, Ecorse, Michigan, as a portion of Michigan's plan to address the sulfur dioxide nonattainment area in Wayne County, Michigan.

The public hearing will be held on April 8, 2015, in the River Rouge High School Auditorium, 1460 West Coolidge Highway, River Rouge, Michigan, 48218. An informational meeting will be held at 6:00 p.m. with the public hearing to follow at 7:00 p.m.

Copies of the proposed rule (ORR 2014-024 EQ) can be downloaded from the Internet through the Office of Regulatory Reinvention at <http://www.michigan.gov/orr>. Click on "Pending Rule Changes" in the left column. Under "Rules by Department," click on "Environmental Quality." Scroll to ORR 2014-024 EQ, and click on "Revision Text." Copies of the rules may also be obtained by contacting the Lansing office at:

Michigan Department of Environmental Quality
Air Quality Division
P.O. Box 30260
Lansing, Michigan 48909-7760
Phone: 517-284-6740
Fax: 517-241-7499
E-Mail: debrulerc@michigan.gov

All interested persons are invited to attend and present his or her views. It is requested that all statements be submitted in writing for the hearing record. Anyone unable to attend may submit comments in writing to the address above, Attention: Cari DeBruler. Written comments must be received by April 9, 2015.

Persons needing accommodations for effective participation in the meeting should contact the AQD at 517-284-6740 one week in advance to request mobility, visual, hearing, or other assistance.

This notice of public hearing is given in accordance with Sections 41 and 42 of Michigan's Administrative Procedures Act, 1969 PA 306, Michigan Compiled Laws (MCL) 24.241 and 24.242. Administration of the rules is by authority conferred on the Director of the MDEQ by Section 5512 of the NREPA, MCL 324.5512. These rules will become effective immediately after filing with the Secretary of State.

Lynn Fiedler, Acting Chief
Air Quality Division

APPENDIX F (continued)
COMMENT & RESPONSE DOCUMENT
PROPOSED RULE 430 PUBLIC HEARING
April 8, 2015

Excerpt of Agency Report for promulgating the review.

General Comments

Comment

Many commenters stated that the proposed rule is unnecessary as the current SO₂ levels at the Southwestern High School (SWHS) air monitor meet the SO₂ NAAQS. In addition, U.S. Steel has made significant emission reductions, with considerable investment required. U.S. Steel competes with international businesses that do not have these investment requirements. U.S. Steel must remain competitive in the international marketplace for steel and the whole area relies on the many U.S. Steel jobs. The proposed rule threatens jobs. Another commenter stated that the air monitor has demonstrated attainment from 2012-2014 when U.S. Steel consistently operated.

Response

A SO₂ SIP is still necessary even though the SO₂ level at the SWHS monitor is now meeting the federal SO₂ 1-hour average NAAQS. While the MDEQ is encouraged to see the attaining status of the air in the vicinity of the air monitor, modeling continues to show areas above the standard where there are no monitors located. The USEPA requires that all areas in the nonattainment area show attainment, through modeling and monitoring.

The MDEQ also has concern for the continued viability of U.S. Steel and has worked with U.S. Steel for over two years in an effort to arrive at a control strategy that is effective at reducing SO₂ impacts in the most cost-effective manner. That effort did not produce a plan sufficient to address the impacts from U.S. Steel, so the proposed rule serves as the portion of the Michigan SIP reducing U.S. Steel impacts.

Comment

A commenter stated that the proposed rule is inappropriately justified solely on theoretical air dispersion modeling that uses potential emissions and not actual air monitoring data and actual emissions. The current modeling methodology greatly overestimates the SO₂ emissions in the region. The requirements in the proposed rule require U.S. Steel to make costly changes based on the overly conservative modeling results. Incurring additional costs when the SWHS air monitor is currently showing attainment with the SO₂ NAAQS is not appropriate. Modeling should use the actual SO₂ emissions as inputs. The proposed rule does not consider the weight of evidence in considering whether it is necessary.

Response

For the SO₂ SIP, the USEPA requires that all locations in the nonattainment area show modeled attainment, not just the location of a single air monitoring site. The USEPA also requires that allowable/potential emissions be modeled instead of actual emissions to account for possible future increases in emissions permissible under higher but legally allowable operating levels. A company has the ability to reduce their allowable emissions by taking limits if they believe their current allowable/potential emissions overestimate their future level of operations and resulting SO₂ emissions. Such an action will result in improved modeled impacts and potentially less costly control projects by the company.

Comment

One commenter stated that the rule targets and restricts emissions from only U.S. Steel. While U.S. Steel emits approximately 6% of the SO₂ in Wayne County, two other nearby sources (local power plants) emit approximately 80% of the Wayne County SO₂ emissions. Using the proposed rule as the only real SIP tool is not an equitable solution for resolving the Wayne County nonattainment designation. Several other commenters also stated that the proposed rule would single out U.S. Steel.

Another commenter stated that the current proposed rule is insufficient for helping to bring the whole area into attainment, because other sources in the area also need to reduce SO₂ emissions. The MDEQ should instead be proposing the original June 2014 draft rule, which needs only minor changes in order to achieve compliance.

Response

An early draft of the rule from early 2014 contained emission limits for all of the affected facilities. The limits were based on modeling that was done to determine what level of control was needed from each facility in order to eliminate violating SO₂ levels in all areas resulting from the combined impacts from all affected facilities. All of the affected companies worked with the MDEQ to develop specific strategies tailored to their facility. All but U.S. Steel eventually agreed to adequate control strategies that were incorporated in air permits in lieu of the provisions in the early draft rule. Thus the proposed rule only applies to U.S. Steel. Contrary to the comment, both the proposed rule and other affected companies' permits will be part of the SIP.

The proposed rule for U.S. Steel adequately provides for reductions of SO₂ impacts and does not need additional adjusting of the limits. The other affected companies also achieve SO₂ reductions and are made legally enforceable in air permits.

Comment

One commenter stated that the proposed rule is more costly than the commenter's Reasonably Available Control Technology (RACT) analysis previously submitted to the MDEQ, which has not been considered. The proposed rule does not consider cost impacts as required by the Clean Air Act (CAA) and the SO₂ emission rates are very restrictive. U.S. Steel does not operate the source of the Coke Oven Gas (COG) produced at the EES Coke plant and has no control over the COG that would allow U.S. Steel to desulfurize it. As a result, U.S. Steel will need to change part of its energy source from COG to natural gas and/or install SO₂ control technologies such as spray dryer absorbers, dry sorbent injection, or wet scrubbers to comply with the proposed rule. However, all of these options have been shown by U.S. Steel's consultant to be economically infeasible. Additionally, the add-on control technologies require a more detailed engineering analysis before each of the controls could be considered technically feasible. Even in the event the technology was technically feasible, the cost effectiveness of these control technologies is cost prohibitive and was therefore rejected as RACT.

Response

For many months the MDEQ worked with U.S. Steel in an effort to find a control strategy that achieves a significant reduction in SO₂ impacts. While U.S. Steel did propose an alternative to the provisions in the rule, the emission reductions associated with this alternative were not sufficient to ensure SO₂ concentrations in southwest Detroit would meet the NAAQS. Proposed Rule 430 was developed as a backstop measure to ensure that the SIP goal was achieved in the event the MDEQ could not come to an acceptable agreement with the affected companies on an alternate strategy that would be the most cost-effective while still achieving significant reductions in SO₂ impacts. Such agreement has occurred with all other affected facilities. As a

result, proposed Rule 430 has proceeded, containing only the provisions for U.S. Steel.

The U.S. Steel RACT approach does not result in any emission reductions or improvement in impacts from the U.S. Steel affected sources since it concludes that no control alternative is cost effective enough to be reasonable. Further, in establishing appropriate controls for the SO₂ SIP, the MDEQ is following the USEPA guidance on the use of RACT. Provisions in the General Preamble for the Implementation of Title I of the CAA Amendments of 1990 state, "The definition for RACT for SO₂ is that control technology which is necessary to achieve the NAAQS (40 CFR Part 51.100 (o))." There is no mention of reasonably available controls or a suggestion that typical cost thresholds limit appropriate controls for bringing an SO₂ nonattainment area into compliance with the NAAQS. Thus, while the CAA clearly states that traditional RACT as a minimum is required for a nonattainment area, the term is redefined or superseded in the language of the Preamble described above. Thus for the SO₂ nonattainment area, whatever feasible control technology that can bring the area into attainment should be considered.

There are a variety of control options available to U.S. Steel besides fuel switching. Subrule 4 has been added to the proposed rule to clarify this point.

Comment

A commenter stated that the proposed rule does not satisfy the CAA's RACT provisions because implementation of the rule utilizing fuel switching would result in emissions increases of SO₂ and other criteria pollutants by requiring the combustion of additional natural gas and the flaring of more Blast Furnace Gas (BFG) and COG. The MDEQ has not considered nitrogen oxide (NO_x) impacts from fuel switching to determine whether or not implementation of the proposed rule would result in exceedances of the NO_x NAAQS. Implementation of the proposed rule would result in a significant emissions increase of over 900 tons annually of NO_x and over 270 tons annually of carbon monoxide. Implementation of the proposed SO₂ rule could result in exceedances of the NO_x NAAQS even with the installation of low NO_x burners. In addition, increases of particulate matter, PM₁₀, PM_{2.5}, SO₂, VOCs, and lead are expected to result from the fuel switching that would be required by the proposed rule.

Response

Proposed Rule 430 does not require utilization of fuel switching as the control strategy. The proposed rule sets SO₂ emission limits only, providing the company with the option to choose one or more controls to bring about the reduction. Subrule 4 has been added to the proposed rule to clarify this point.

Comment

A commenter stated that the MDEQ has not shown how the proposed SO₂ limitation on BFG was economically or technologically feasible and does not indicate the source or derivation of the proposed limitation. The U.S. Steel BFG may not be able to consistently meet the proposed limits.

Response

The proposed rule does not set SO₂ limits on BFG, but does set a limit of .0274 grains per dry standard cubic foot of hydrogen sulfide content of the BFG. This value was provided by U.S. Steel during a meeting with the company.

Comment

A commenter stated that BFG and COG are by-product gases that are generated during the steel-making and coke-making processes; U.S. Steel traditionally recovers these gases (purchasing COG from EES Coke) and uses them as an energy source. However, based upon

the proposed rule, U.S. Steel would no longer be able to reuse these gases as the proposed rule would require switching fuel to the combustion of natural gas in lieu of COG or BFG at certain emission units. Therefore, the BFG and COG that is generated from these processes would need to be flared, wasting gases that could be used as an energy source. U.S. Steel does not have the capacity to flare the additional BFG at the existing flares and therefore would be required to install and operate an additional BFG flare.

Another commenter stated that the proposed rule will cause U.S. Steel to stop using COG and BFG and will have to buy other fuels. The COG and BFG will have to be disposed of by alternate means; the usual disposal means would be to flare them off. The proposed rule does not lessen the SO₂ entering the atmosphere and adds to the carbon and heat emissions entering the atmosphere.

Response

Other control options besides fuel switching exist to reduce the level of sulfur in the by-product gases and allow their continued use as a fuel. Subrule 4 has been added to the proposed rule to clarify this point. Other options include desulfurization of the COG, add-on SO₂ controls, and using taller stacks to increase dispersion of the SO₂. Desulfurization of the COG can be accomplished at a reasonable cost, as stated by U.S. Steel based on their experience with this technology at their other facilities. The company has not chosen to pursue this method. Also, if U.S. Steel chooses not to use BFG or COG, other customers could consider doing so, thereby eliminating the need for an additional flare.

Comment

A commenter stated that the proposed rule does not address USEPA's concerns with MDEQ's preliminary strategy, provided to the MDEQ in an April 21, 2014, letter. The USEPA requested the MDEQ consider additional emission reduction measures, including desulfurization of COG and indicated that desulfurization was economically feasible. The commenter concurs with USEPA. Another commenter stated that MDEQ should impose desulfurization of the COG, resulting in a fuel that is actually usable. A third commenter stated that COG desulfurization is an available feasible control. The commenter notes that the business arrangements necessary for U.S. Steel to burn COG that EES Coke desulfurizes will be challenging, but it is Michigan's responsibility to ensure that all measures that are feasible and necessary to provide for attainment throughout the nonattainment area are required in their SIP.

Response

The MDEQ agrees that desulfurization of COG may be a reasonable and economically feasible strategy. However, based on our modeling, EES Coke, the producer of the COG, contributes only minimally to high SO₂ impacts in the SO₂ nonattainment area via the burning of COG. It is the COG transferred from EES Coke and burned in U.S. Steel's reheat furnaces and boilers that results in high SO₂ emissions. These emissions, combined with the low stack heights on these operations, create areas of high ambient SO₂ concentrations. U.S. Steel could choose to meet the emission limits in the proposed rule with COG desulfurization either on their own or via an agreement with EES Coke.

Comment

A commenter stated that forcing U.S. Steel to actually flare off a lot of their combustion gases will create a whole other problem, which could have been solved with SO₂ reduction in the first place. U.S. Steel and EES Coke should cooperate between their respective companies.

Response

The MDEQ has encouraged cooperation between the companies but this approach has not been adopted at this time.

Comment

A commenter stated that the proposed rule includes a hydrogen sulfide emission limit from the BFG, but EES Coke should be required to reduce hydrogen sulfide content in the COG.

Response

The proposed rule addresses emissions from U.S. Steel operations. The BFG limit is in the form of a hydrogen sulfide emission limitation. Since U.S. Steel purchases a sulfur-containing fuel to run their boilers and reheat furnaces, they are responsible for the resulting emissions. This is no different than a coal-fired power plant that purchases coal and burns it in their boilers. The power plant is responsible for meeting emission limits, not the fuel supplier.

Comment

A commenter stated that the hourly averaging times in the proposed rule are not appropriate and do not offer necessary operational flexibility. The commenter questions why the MDEQ has not used the USEPA guidance to develop more appropriate averaging times, especially when other sources included as part of the SIP were allowed to use different averaging times for their operations.

Another commenter was pleased to see that the proposed rule includes one-hour average SO₂ emission limitations and stated that this will help to ensure that the one-hour SO₂ NAAQS of 75 parts per billion is met. The proposed rule assists in bringing the area into attainment.

Response

The USEPA guidance does provide for averaging times greater than hourly, and the MDEQ can allow longer averaging times that are demonstrated through the data analysis described in the USEPA guidance. In the case of U.S. Steel, no request to establish limits over longer averaging times has been received by the MDEQ. The USEPA guidance suggests that making such a demonstration without hourly emissions data provided by continuous emission monitors is difficult. Since U.S. Steel has no such in-stack monitors in place, it is unlikely that the USEPA methodology could be met using data U.S. Steel has available.

Comment

A commenter stated that the proposed rule does not include alternative reduction scenarios. The proposed rule should provide multiple options to achieve SO₂ reductions.

Response

The proposed rule does not specify control methods, only SO₂ emission limits. The company can choose a variety of control options. Subrule 4 has been added to the proposed rule to clarify this point.

Comments addressing issues outside of the proposed rule

Comment

Several comments were received discussing the overall proposed SIP for the SO₂ nonattainment area in Wayne County. The comments addressed the adequacy of emission reductions and control strategies from other affected sources, the deadline for SIP submittal, and the applicability of USEPA's Clean Data Determination policy.

Additional comments were received on other air quality issues. These include air pollutant impacts on low income and minority communities, the location of the SWHS air monitor, the need for more air monitors, ongoing adverse health effects, other pollutant emissions from U.S. Steel, and procedures in emergencies.

Response

These issues are beyond the scope of the proposed rule and therefore not addressed in this Report. The MDEQ responded to these comments in the draft SIP for the August, 2015 public comment period.

Comments on Specific Rule Language

Comment R 336.1430(2)(a)

A commenter stated that the proposed pound per hour limit is economically infeasible and possibly technically infeasible. If fuel switching is required by the proposed rule, extensive modification at the facility will be required to accommodate the additional volumes of natural gas that would be needed as fuel. The current natural gas distribution system infrastructure cannot handle the increased flow and pressure required to reduce the current usage of COG to meet the proposed hourly limit. To meet reheat furnace operation needs under the proposed rule COG usage must be reduced approximately 45-60% from 2014 levels. Requiring such modification is overly burdensome, especially since U.S. Steel has already decreased COG usage continuously since 2011 within current operating/ equipment limitations.

Response

The proposed rule does not specify control methods, only SO₂ emission limits. The company can choose a variety of control options. Subrule 4 has been added to the proposed rule to clarify this point.

Comment R 336.1430(2)(b) and R 336.1430(3)(c)

A commenter stated that these requirements are overly burdensome and unnecessarily require the installation of additional and redundant monitoring equipment. The current methods for determining usage for COG and natural gas usage rates are accurate and meet the level of detail required for accurate emission calculations.

Response

The requirements in the proposed rule for monitoring each type of gas going to the reheat furnaces and boilers are a minimum requirement allowing for 1) the calculation of SO₂ emissions; and 2) the determination of the representativeness of the conditions existing when the stack test is conducted.

Comment R 336.1430(2)(c) and R 336.1430(3)(e)

A commenter stated that these subrules require installation of unnecessary monitoring equipment. Existing monitoring equipment and calculation methodologies are adequate and meet the level of detail required by the department.

Response

The requirements in the proposed rule for SO₂ emission rate calculation are minimum requirements for determining the hourly SO₂ emission rate and compliance with the hourly emission limits.

Comment R 336.1430(2)(d)

A commenter stated that the stack testing is duplicative and unnecessary when required in addition to subrules (2)(b) and (2)(c). U.S. Steel is willing to perform stack testing in lieu of subrules (2)(b) and (2)(c), but not in addition to said subrules.

Response

Stack tests are necessary to ensure that the limits imposed by the proposed rule are being met. In turn, gas flow measuring devices are necessary to ensure that the stack tests are being performed under representative conditions. The burden of testing has been minimized by requiring only a representative stack to be tested and not all five stacks.

Comment R 336.1430(2)(e)(A) and R 336.1430(3)(f)(i)

A commenter stated that it is inappropriate for U.S. Steel to identify corrective actions for exceedances caused and corrected by a third party during the reporting period. As discussed in further detail below for subrule R 336.1430(3)(g), U.S. Steel should not be arbitrarily restricted through the use of EES Coke's permit limit for COG for SO₂ emission calculations. Through appropriate use of EES Coke's existing COG SO₂ content data and resulting SO₂ emission calculations, an increase in COG SO₂ content may cause an exceedance of an SO₂ hourly limit. In this case, U.S. Steel would not be the facility performing the corrective action; i.e., corrective actions performed by EES Coke would not be known by U.S. Steel. EES Coke supplies COG to U.S. Steel and they are required to meet their own permit limits independently of U.S. Steel. At no time once the COG crosses U.S. Steel's property boundary for use at the facility does any change to the COG material content occur. In the event that EES Coke exceeds its SO₂ permit limit and causes exceedances at the Hot Strip Mill, U.S. Steel would not be the one performing corrective actions.

Response

U.S. Steel is responsible for meeting the emission limit in the rule. If the limit is exceeded, the company must decide how to address the problem, which may involve discussions with its contractual fuel supplier.

Comment R 336.1430(3)(a)(i)-(ii)

A commenter stated that the proposed pounds per hour limits are economically infeasible and possibly technically infeasible. If fuel switching is required by the proposed rule, extensive modifications at the facility would be required to accommodate the additional volumes of natural gas that would be needed to meet the pounds per hour limits. The use of natural gas at the No. 1 Boiler House is not technically feasible without extensive infrastructure modification. The boilers are not equipped to use natural gas as a fuel source. Additionally, several boilers at the No. 1 Boiler House do not have a sufficient supply of natural gas available for fuel use. Assuming it was determined to be technically feasible to install add-on controls on the boilers, such installation would be extremely costly and still not guarantee compliance with the limits in

the proposed rule.

Response

The proposed rule does not specify control methods, only SO₂ emission limits. The company can choose a variety of control options.

Comment R 336.1430(3)(a)(iii)

A commenter stated that it is overly burdensome and arbitrary to assign a maximum hydrogen sulfide content limit on BFG from the boilers in addition to the SO₂ pounds per hour limit that has been assigned to both boiler houses. The limit arbitrarily assigns the maximum hydrogen sulfide content of BFG to 0.0274 grains per dry standard cubic foot. The MDEQ has not shown how this limit was economically or technologically achievable.

Response

This BFG limit was originally provided by U.S. Steel at a meeting between the MDEQ and the company. In previous discussions regarding the company's concern with this specific value, the MDEQ asked the company for an alternate value to include in the rule. The company provided none, so the MDEQ will keep the .0274 grains per dry standard cubic foot in the proposed rule because it is necessary for calculating the SO₂ emissions from the operations using the BFG to show compliance with the SO₂ limit.

Comment R 336.1430(3)(b)

A commenter stated that this is a Renewable Operating Permit requirement and should be removed from the proposed rule.

Response

The MDEQ includes this provision in the proposed rule to ensure consistency with existing permits.

Comment R 336.1430(3)(d)

A commenter stated that the additional monitoring equipment is an overly burdensome cost and not justified for BFG. BFG hydrogen sulfide content is minimal compared to other fuels utilized and has a negligible impact on the SWHS air monitor.

Response

The requirement in the proposed rule for SO₂ emission rate calculation for the reheat furnaces is a minimum requirement for determining the hourly SO₂ emission rate and compliance with the hourly emission limit.

Comment R 336.1430(3)(g)

A commenter stated that the proposed average hourly emission rate approach is overly burdensome as it requires installation of multiple monitoring equipment and updated PLC programming requiring costly retrofits to existing equipment. It is inappropriate to assign a theoretical maximum COG SO₂ limit based on EES Coke's permit as this restricts operational flexibility by U.S. Steel to reuse the waste COG. The approach in the proposed rule is overly conservative as EES Coke's actual SO₂ emissions are generally well under the emission limit. It is illogical that U.S. Steel would be required to use the EES Coke allowable emission rate rather than actual emission rates in its calculations for determining compliance with the proposed rule. Rather than arbitrarily restricting U.S. Steel's operations further through the use of EES Coke's permit limit, EES Coke's actual COG SO₂ content data should be used in the calculation in lieu of the EES Coke emission limit of 0.702 lbs/1000 ft³.

Response

An alternative to this approach was included in an early draft of the rule, requiring continuous monitoring for H₂S in the COG that U.S. Steel received from EES Coke. However, U.S. Steel commented on the excessive cost for this kind of monitoring, and the MDEQ therefore removed that provision from the proposed rule. Without a monitor, the MDEQ sees the use of the permitted H₂S value to account for the sulfur content fluctuation in the COG.

Comment R 336.1430(3)(h)

A commenter stated that stack testing is duplicative and unnecessary when required in addition to conditions (3)(c) and (3)(e). It is overly burdensome to require conditions (3)(c) and (3)(e) in addition to stack testing. U.S. Steel is willing to perform stack testing in lieu of conditions (3)(c) and (3)(e), but not in addition to said requirements.

Response

The initial stack test of representative boilers is necessary to correlate calculated emissions with actual emissions to assist in the compliance determination. The burden of testing has been minimized by requiring only a representative stack on each boiler house to be tested and not all five stacks.

APPENDIX G
DTE RIVER ROUGE PERMIT TO INSTALL 40-08H

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

May 3, 2016

**PERMIT TO INSTALL
40-08H**


ISSUED TO
DTE Electric Company – River Rouge Power Plant

LOCATED AT
1 Belanger Park Drive
River Rouge, Michigan

**IN THE COUNTY OF
COUNTY**

**STATE REGISTRATION NUMBER
SRN**

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: April 27, 2016	
DATE PERMIT TO INSTALL APPROVED: May 3, 2016	SIGNATURE: 
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMITTO 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
MDNRE	Michigan Department of Natural Resources and Environment (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, 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-BOILER#3	Steam Generating Unit No. 3 – A 2670 MMBtu per hour capacity boiler fueled by pulverized coal, natural gas, blast furnace gas, and coke oven gas. Unit No. 3 is equipped with Low-NO _x burners and a dry cod-side electrostatic precipitator (ESP), Dry sorbent Injection (DSI), and Activated Carbon Injection (ACI).	1/1/1955; 3/21/2000; 4/2011	NA
EU-FLYASH_SILO#1	Fly ash silo with dust collector.	1/1/1954 4/2011	FG-FLYASH-HANDLG
EU-FLYASH_SILO#2	Fly ash silo with dust collector.	1/1/1954 4/2011	FG-FLYASH-HANDLG
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.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-FLYASH-HANDLG	Two silos storing boiler flyash collected in the electrostatic precipitators. Each silo is equipped with a dust collector (baghouse) for particulate control.	EU-FLYASH_SILO#1, EU-FLYASH_SILO#2

The following conditions apply to: EU-BOILER3

DESCRIPTION: Steam Generating Unit 3 2670 MMBtu per hour capacity boilers. The boiler is fueled by pulverized coal, natural gas, blast furnace gas, and coke oven gas. The boiler is equipped with Low-NO_x burners and an electrostatic precipitator.

POLLUTION CONTROL EQUIPMENT: Low NO_x burners overfire air, ESP, DSI and ACI..

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. PM	0.175 pounds per 1000 pounds of exhaust gases on a wet basis corrected to 50% excess air	Test protocol	EU-BOILER#3	GC 13	R 336.1331(1)(a)
2. SO ₂	1.67 pounds per MMBTU heat input based on a sulfur content of 1.0% by weight and a heat content of 12,000 BTU per pound while burning coal	Daily average	Applies individually to EU-BOILER#2 and EU-BOILER#3	SC VI.1	R 336.1401(1), Michigan State Implementation Plan, 40 CFR 52.21(d)
3. SO ₂	50.5 tons per day	Each calendar day	EU-BOILER#3	SC VI.1	40 CFR 52.21(d)
4. SO ₂	2,300 pph	720-clock hour rolling average, as determined at the end of each calendar day	EU-BOILER#3	SC VI.1	R 336.2804, 40 CFR 52.21(d), Section 110 CAA

II. MATERIAL LIMITS

No additional requirements.

III. PROCESS/OPERATIONAL RESTRICTIONS

- The permittee shall not operate EU-BOILER#3 unless the Low-NO_x burners and the electrostatic precipitator servicing the boiler are installed, maintained, and operated in a satisfactory manner. The electrostatic precipitator shall be activated prior to firing coal in the boiler it services. **(R 336.1331(1)(a), R 336.1910)**
- The permittee shall operate EU-BOILER#3 in accordance with an approved Malfunction Abatement Plan. The permittee shall implement and maintain the Plan. The Plan shall address the Low-NO_x burners and electrostatic precipitators. The Plan shall also address abnormal conditions, startup and shutdown, malfunctions, and excess emissions. Subsequent revisions must be approved by the District Supervisor, AQD. **(R 336.1910, R 336.1911)**
- No coke oven gas shall be burned in EU-BOILER#3 except that which has been processed. The contract between the permittee and its coke oven gas supplier shall prohibit the transfer of unprocessed coke oven gas to the permittee. The permittee shall maintain a copy of the contract on file and it shall be made available to the Department upon request.¹ **(R 336.1224, R 336.1225, R 336.1901)**
- The permittee shall implement the measures identified in the protocols for the minimization of carbon monoxide emissions from EU-BOILER#3. Revisions to the protocol must be approved by the AQD. **(40 CFR 52.21(b)(2)(iii)(h))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate the electrostatic precipitator (ESP) servicing EU-BOILER#3 unless the ESP is equipped with a saturable core reactor, silicon-controlled rectifier linear reactor, or equivalent type automatic control system. **(R 336.1910)**
2. The transformer-rectifier set of the ESP servicing EU-BOILER#3 shall be capable of operating at the optimum spark-limited mode and shall meter and display the primary RMS voltage and amperage, the average secondary amperage, and the average spark rate. The requirement to meter and display the average spark rate shall not apply if the automatic controller employs solid state circuitry to preset power levels based on sparking rate limits. **(R 336.1910)**

V. TESTING/SAMPLING

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

1. On a periodic basis within three calendar years of the previous test, or upon request of AQD, the permittee shall verify and quantify the PM emission rate (in pounds per 1000 pounds of exhaust gases on a wet basis at 50 percent excess air) from EU-BOILER#3, by testing at permittee's expense and in accordance with Department requirements. The test shall be in accordance with reference method 5B at R 336.2011 or reference method 5C at R 336.2012 unless an alternative test method is approved by the AQD. Not less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Not less than seven days prior to the tests, the permittee shall notify the AQD in writing of the time and place of the test and who shall conduct it. 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 336.1331(1)(a), R 336.1331(2), R 336.2001, R 336.2003, R 336.2004)**

See Appendix 5-S1 of ROP No: MI-ROP-B2810-2012

VI. MONITORING/RECORDKEEPING

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

1. For EU-BOILER#3, the permittee shall monitor and record sulfur dioxide emissions, nitrogen oxides emissions, carbon dioxide emissions, and exhaust gas flow on a continuous basis according to the monitoring requirements in 40 CFR 75. The continuous emission monitoring system (CEMS) for SO₂ (comprising the monitors for sulfur dioxide concentration and for carbon dioxide concentration when monitoring for emissions on a pounds per MMBTU basis; comprising the monitors for sulfur dioxide concentration and for exhaust gas flow when monitoring for emissions on a tons per day basis) shall be used for compliance demonstrations with the SO₂ emission limitations at Conditions I.2 through 1.4 during each calendar day wherein the SO₂ CEMS collects at least one quality-assured monitor operating hour, as defined at 40 CFR 72.2. When an SO₂ CEMS collects at least one hour but less than twenty-four hours of quality assured data (i.e. there are between one and twenty-three hours, inclusive, within the calendar day wherein the SO₂ CEMS is not operating and/or operating "out-of-control", as defined at 40 CFR 72.2), the permittee shall implement the procedures at Subpart D of 40 CFR 75 to calculate SO₂ emissions for hours wherein quality assured data was not collected. When an SO₂ CEMS fails to collect at least one quality-assured monitor operating hour within a calendar day, the permittee shall determine compliance with the corresponding SO₂ emission limitation at Conditions I.2, and I.3 by sampling for the heat content and sulfur content of the coal combusted within the emission unit during the calendar day and by determining the amount of coal combusted in the emission unit during the calendar day, using methods acceptable to the AQD. **(R 336.1401(1), R 336.2804, 40 CFR 52.21(d), 40 CFR 75, Michigan State Implementation Plan, Section 110 CAA)**

2. For EU-BOILER#3, the permittee shall monitor and record visible emissions on a continuous basis according to the monitoring requirements in 40 CFR 75.14(a) which specify compliance with Performance Specification 1 of Appendix B to 40 CFR Part 60. The continuous monitoring system for visible emissions shall be used for compliance demonstration for the visible emissions limitations in General Condition 11 as applicable to EU-BOILER#3. **(R 336.1301(1)(a), R 336.2101(1)(a), R 336.2150(1)(a), 40 CFR 75.14(a))**
3. The permittee shall implement and maintain a quality assurance and quality control program for the continuous monitoring devices installed. **(40 CFR 75, R 336.1401(1), 40 CFR 52.21(d), Michigan State Implementation Plan, R 336.2804, Section 110 CAA)**
4. The permittee shall keep a written record of the measures implemented to minimize the emission of carbon monoxide. **(40 CFR 52.21(b)(2)(iii)(h))**
5. The permittee shall utilize COMS-recorded opacity as an indicator of the emission unit's compliance with the particulate matter limit, except during periods of monitoring system malfunction, system repairs, or quality assurance activities. An excursion is defined as two or more consecutive, 1-hour block average opacity values greater than 20 percent as measured by COMS and recorded by the DAHS. This condition does not affect compliance with R 336.1301. **(40 CFR 64.6(c)(1)(i) & (ii), (c)(2), (c)(3), and 64.7(c))**
6. The permittee shall operate the COMS during all required periods when the coal-fired boiler is operating. Data recorded during monitoring malfunctions, repair activities and QA/QC operations shall not be used for 40 CFR 64 compliance. **(40 CFR 64.6(c)(3), 64.7(c))**
7. Upon detecting CAM exceedances/excursions, the permittee shall restore operation of the emission unit, control device, and associated pollutant capture system equipment to normal/compliant operation. CAM exceedances/excursions trigger initial inspections, corrective action(s), and recordkeeping of the probable cause & corresponding resolution. **(40 CFR 64.7(d))**

See Appendices 3-S1, 4-S1, and 7-S1 of ROP No: MI-ROP-B2810-2012

VII. REPORTING

1. The permittee shall submit to the Chief of the Air Compliance Branch, U.S. Environmental Protection Agency and the District Supervisor of the Air Quality Division, within 30 days of the end of the calendar quarter a written report for the calendar quarter containing the days of operation and the sulfur dioxide emission rates (average emissions in pounds per MMBTU and emissions in tons per day) for EU-BOILER#3. **(R 336.1401(1), 40 CFR 52.21(d), Michigan State Implementation Plan)**
2. For the COMS, the permittee shall submit to the District Supervisor and the Technical Programs Unit Supervisor, Air Quality Division, and to the Chief of the Air Compliance Branch, U.S. Environmental Protection Agency, within 30 days of the end of the calendar quarter, a written report for each calendar quarter which shall include all of the information listed below.
 - a. Excess emissions and the nature and cause of excess emissions, if known, as follows:
 - i. For opacity measurements, the report shall consist of the magnitude, in actual percent opacity, of all 6-minute averages of opacity more than the applicable opacity standard for each hour of operation (all allowable exceptions are to be deducted prior to determining the excess averages of opacity). Average values shall be obtained by integration over the averaging period or by arithmetically averaging a minimum of 24 equally spaced, instantaneous opacity measurements per 6 minutes.
 - b. The date and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of repairs or adjustments made.
 - c. If the monitoring system has not been inoperative, repaired, or adjusted, and if no excess emissions occurred, a statement attesting to this fact.
(R 336.2170(1))
3. Permittee shall report sulfur dioxide, nitrogen oxide and carbon dioxide emissions, volumetric flow, and opacity data in accordance with 40 CFR Part 75 (Continuous Emission Monitoring). **(40 CFR 75)**

4. The permittee shall perform an annual audit of the continuous emissions monitoring system for visible emissions (COMS) using the procedures set forth in USEPA Publication 450/4-92-010 entitled "Performance Audits Procedures for Opacity Monitors", or a procedure acceptable to the AQD. Within 30 days after the completion of the audit, the results of the annual audit shall be submitted to the AQD. **(40 CFR 64.6(c)(1)(iii))**
5. Semiannually or more frequently report Compliance Assurance Monitoring (CAM) summary information on the number, duration, and cause of exceedances/excursions in the reporting period, and the corrective actions taken in response. If there were no exceedances/excursions in the reporting period, then this report shall include a statement that there were no exceedances/excursions. **(40 CFR 64.9(a)(2)(i), R 336.1213(3))**
6. Semiannually or more frequently report Compliance Assurance Monitoring (CAM) summary information on the monitor downtime in the reporting period. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2)(ii))**
7. Starting with the first calendar quarter of 2017 and every quarter thereafter, in accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report and summary report in an acceptable format to the department 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 excess emission report shall include the following information:
 - a. A report of each exceedance above the SO₂ limitations. This includes the date, time, magnitude, cause and corrective actions for all occurrences during the reporting period.
 - b. A report of all periods of continuous emission monitoring system downtime, any downtime sampling and analysis completed, and corrective action.
 - c. A report of any periods that any component of the continuous emission monitoring system exceeds the instrument range. If no exceedances or continuous emission monitoring system downtime occurred during the reporting period, the company shall report that fact. **(R 336.2804, 40 CFR 52.21(d), Section 110 CAA)**

See Appendix 8-S1 of ROP No: MI-ROP-B2810-2012

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-BOILER#3	154	385	R336.1225

IX. OTHER REQUIREMENTS

1. The permittee shall comply with the acid rain permitting provisions of 40 CFR, Part 72.1 to 72.94, as outlined in a complete Phase II, Acid Rain Permit issued by the AQD. Phase II, Acid Rain Permit No. MI-AR-1740-2012 is hereby incorporated into this ROP as Appendix 10-S1. **(R 336.1299(2)(a))**
2. 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 Rule 299(2)(a) and 40 CFR, Part 72.9(c)(1)(i). **(R 336.1299(2)(a), 40 CFR 72.9)**
3. The permittee shall promptly notify AQD for the need to modify the CAM Plan if the existing plan is found to be inadequate and shall submit a proposed modification to the ROP if necessary. **(40 CFR 64.7(e))**
4. The permittee shall properly maintain the monitoring systems, including maintaining necessary parts for routine repairs of monitoring equipment. **(40 CFR 64.7(b))**
5. The permittee shall comply with applicable requirements of the federal National Emissions Standards for Hazardous Air Pollutants as set forth in 40 CFR 63, Subparts A and UUUUU for EU-BOILER#3. The permittee shall comply with all notice requirements, emissions standards and continuous emissions monitoring, recordkeeping, and reporting requirements as required in 40 CFR 63, Subparts A and UUUUU. All emission and operating data shall be kept on file for a period of at least five years and made available to the AQD upon request. **(40 CFR 63 Subparts A and UUUUU)**

Footnotes:

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

The following conditions apply to: FG-FLYASH-HANDLG

DESCRIPTION: Two silos storing boiler flyash collected in the electrostatic precipitators. Each silo is equipped with a dust collector (baghouse) for particulate control.

Emission Units: EU-FLYASH_SILO#1, EU-FLYASH_SILO#2

POLLUTION CONTROL EQUIPMENT: Each silo is equipped with a dust collector (baghouse) for particulate control.

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. PM	0.10 pounds per 1000 pounds of exhaust gases	Test protocol	Applies individually to EU-FLYASH_SILO#1 and EU-FLYASH_SILO#2	GC 13	R 336.1331(1)(a)

II. MATERIAL LIMITS

No additional requirements

III. PROCESS/OPERATIONAL RESTRICTIONS

1. Each dust collector shall be installed, maintained, and operated in a satisfactory manner and in accordance with existing Air Pollution Control Rules and existing law. **(R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETERS

No additional requirements

V. TESTING/SAMPLING

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

No additional requirements

VI. MONITORING/RECORDKEEPING

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

1. Permittee shall perform daily visual emissions observations (non-certified) during each day the emission unit is in operation. The visual observations shall be performed in accordance with U.S. EPA Method 22. If visible emissions are observed, the permittee either shall shutdown the loading to the emission unit exhibiting the visible emissions or shall conduct visual observations in accordance with U.S. EPA Method 9 by an observer certified in U.S. EPA Method 9. Permittee shall maintain records of all visual observations performed and the records shall be made available to the Department upon request. **(R 336.1910)**
2. Permittee shall conduct regular inspections on the dust collectors for the purpose of determining the operational condition of the baghouse and, if necessary, the reason for malfunction or failure. **(R 336.1910)**
3. After observing visible emissions from a dust collector, the permittee shall immediately conduct an inspection to determine the operational condition of the dust collector and, if necessary, the reasons for failure or malfunction of the bags, metal housings, fans, blowers, hopper bottom discharge valve, reverse air dampers or pulse jets (whichever is applicable), access doors, and gaskets. Any repairs and corrective actions needed to address the causes of malfunction or failure shall be performed immediately. Records shall be maintained of the event, including the date and time of the event, the date and time the emission unit and dust collector ceased operation or the date and time and result of the Method 9 evaluation, the cause(s) of malfunction or failure, the repairs and the corrective action taken. **(R 336.1910)**

VII. REPORTING

No additional requirements

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
No additional requirements	No additional requirements	No additional requirements	No additional requirements

IX. OTHER REQUIREMENTS

No additional requirements

Footnotes:

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

APPENDIX H
DTE TRENTON CHANNEL PERMIT TO INSTALL 125-11C

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

April 29, 2106

**PERMIT TO INSTALL
125-11C**

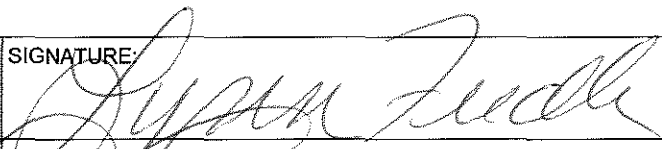

ISSUED TO
DTE Electric Company, Trenton Channel Power Plant

LOCATED AT
4695 West Jefferson Avenue
Trenton, Michigan

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
B2811

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: January 21, 2016	
DATE PERMIT TO INSTALL APPROVED: April 29, 2016	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 ₂ e	Carbon Dioxide Equivalent	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H ₂ S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
GHGs	Greenhouse Gases	kW	Kilowatt
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	NO _x	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality (Department)	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM10	PM with aerodynamic diameter ≤10 microns
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM2.5	PM with aerodynamic diameter ≤ 2.5 microns
NSPS	New Source Performance Standards	pph	Pounds per hour
NSR	New Source Review	ppm	Parts per million
PS	Performance Specification	ppmv	Parts per million by volume
PSD	Prevention of Significant Deterioration	ppmw	Parts per million by weight
PTE	Permanent Total Enclosure	psia	Pounds per square inch absolute
PTI	Permit to Install	psig	Pounds per square inch gauge
RACT	Reasonably Available Control Technology	scf	Standard cubic feet
ROP	Renewable Operating Permit	sec	Seconds
SC	Special Condition	SO ₂	Sulfur Dioxide
SCR	Selective Catalytic Reduction	THC	Total Hydrocarbons
SRN	State Registration Number	tpy	Tons per year
TAC	Toxic Air Contaminant	µg	Microgram
TEQ	Toxicity Equivalence Quotient	VOC	Volatile Organic Compound
VE	Visible Emissions	yr	Year

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

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
 - a. A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b. A visible emission limit specified by an applicable federal new source performance standard.
 - c. A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**

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

SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

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

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EU-BOILER#16	No. 16 Boiler, tangentially fired boiler, 52.5 MW nameplate capacity, with dry wire Electrostatic precipitators and sulfur conditioning system. Emissions are vented to the ambient air through stack SV0006.	01-01-1948 / 03-15-1991 / 01-27-2012	FG-BOILER_9A&16-19
EU- BOILER#17	No. 17 Boiler, tangentially fired boiler, 52.5 MW nameplate capacity, with dry wire Electrostatic precipitators and sulfur conditioning system. Emissions are vented to the ambient air through stack SV0006.	01-01-1948 / 03-15-1991 / 01-27-2012	FG-BOILER_A9&16-19
EU- BOILER#18	No. 18 Boiler, tangentially fired boiler, 52.5 MW nameplate capacity, with dry wire Electrostatic precipitators and sulfur conditioning system. Emissions are vented to the ambient air through stack SV0006.	01-01-1948 / 03-15-1991 / 01-27-2012	FG-BOILER_9A&16-19
EU- BOILER#19	No. 19 Boiler, tangentially fired boiler, 52.5 MW nameplate capacity, with dry wire Electrostatic precipitators and sulfur conditioning system. Emissions are vented to the ambient air through stack SV0006.	01-01-1948 / 03-15-1991 / 01-27-2012	FG-BOILER_9A&16-19
EU-BOILER_9A	Boiler No. 9A, tangentially fired boiler, 520 MW nameplate capacity, with dry wire Electrostatic precipitators and Low-NO _x burners. Emissions are vented to the ambient air through stack SV0007.	01-01-1965 / 11-21-2000 / 01-27-2012	FG-BOILR_9A&16-19
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.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-BOILER_9A&16-19	Boilers 9A and Boilers 16 through 19.	EU-BOILER#16, EU-BOILER#17, EU-BOILER#18, EU-BOILER #19, EU-BOILER_9A

The following conditions apply to: FG-BOILER 9A&16-19

DESCRIPTION: Boiler 9A and Boilers 16 through 19.

Emission Units: EU-BOILER_9A, EU-BOILER#16, EU-BOILER#17, EU-BOILER#18, EU-BOILER#19

POLLUTION CONTROL EQUIPMENT: For Unit 9A, Electrostatic Precipitators and Low NO_x Burners, with emissions vented to the ambient air through stack SV0007. For Boilers 16-19, Sulfur Conditioning System and Electrostatic Precipitators, with emissions vented to the ambient air through stack SV0006.

I. EMISSION LIMITS

The Permittee shall comply with the following emission limits through April 15, 2016. Effective April 16, 2016, the Flexible Group dissolves and the permittee shall comply with the Special Conditions found in EU-BOILER_9A:

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. SO ₂	151.36 tons per day	Calendar Day	FG-BOILER_9A&16-19	SC VI.1, SC VI. 2, SC VI.3	R336.1201(3)
2. SO ₂	55,246.4 tpy	Calendar Year	FG-BOILER_9A&16-19	SC VI.1, SC VI. 2, SC VI.3	R336.1201(3)
3. PM	0.19 pounds per 1000 pounds exhaust gases on a wet basis, corrected to 50% excess air.	Test Protocol	EU-BOILER#16, EU-BOILER#17, EU-BOILER#18, EU-BOILER#19	SC V.I	R336.1331
4. PM	0.15 pounds per 1000 pounds exhaust gases on a wet basis, corrected to 50% excess air.	Test Protocol	EU-BOILER_9A	SC V.I	R336.1331

II. MATERIAL LIMITS

1. The sulfur content of the coal as fired to each boiler in FG-BOILER_9A&16-19 shall not exceed 0.83 pound per million BTU's heat input, based on a monthly average. The permittee shall demonstrate compliance with this limit using either continuous emission monitors (CEM) and associated data acquisition and handling system (DAHS), or based on the sulfur content and heat content in the coal. **(R336.1201(3), R 336.1401, Michigan State Implementation Plan)**
2. The sulfur content of the distillate oil (No. 2 fuel oil) as fired in FG-BOILER_9A&16-19 shall not exceed 0.3 percent by weight. **(R 336.1401, Michigan State Implementation Plan)**

III. PROCESS/OPERATIONAL RESTRICTION

1. Permittee shall only burn coal or distillate fuel oil (No. 2 fuel oil) in FG-BOILER_9A&16-19. **(R 336.1201(3))**
2. EU-BOILER_9A shall be operated with low NO_x burners installed and operated properly. **(40 CFR Part 52.21(b)(2)(iii)(h), R 336.1910)**
3. FG-BOILER_9A&16-19 shall be operated with the electrostatic precipitators (ESP) installed and operating properly to insure that the stack emissions meet the applicable emission limits. **(R336.1301, R336.1331, R336.1910)**
4. Permittee shall maintain and implement a Malfunction Abatement Plan (MAP) for EU-BOILER_9A. The MAP will address the Low NO_x Burners and the Electrostatic Precipitator. In addition, the MAP will also address abnormal conditions, startup/shutdown, malfunctions and excess emissions. **(R 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER

1. The permittee shall not operate the ESP unless each is equipped with a saturable core reactor, silicon-controlled rectifier linear reactor, or equivalent type automatic control system. **(R 336.1910)**
2. Each transformer-rectifier set of the ESP shall be capable of operating at the optimum spark-limited mode and shall meter and display the primary RMS voltage and amperage, the average secondary amperage, and the average spark rate. The requirements to meter and display average spark rate shall not apply if the automatic controller employs solid state circuitry to preset power levels based on sparking rate limits. **(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. Permittee shall monitor and record the sulfur dioxide, nitrogen oxide, stack gas flow, carbon dioxide, and opacity on a continuous basis in a manner and with instrumentation acceptable to the Air Quality Division and according to the monitoring requirements in 40 CFR Part 75. **(40 CFR 75)**
2. The permittee shall maintain a complete record of fuel oil specifications and/or fuel analysis for each delivery, or storage tank, of fuel oil, and the amount of fuel oil combusted on a calendar day basis in each boiler in FG-BOILER_9A&16-19 in lieu of Part 75, quality-assured data to calculate the calendar month average (tons/month) and the calendar year average (tons/year) Sulfur Dioxide mass emissions. These records may include purchase records for ASTM specification fuel oil, specifications or analysis specified by the vendor at the time of delivery, analytical results from laboratory testing, or any other records pre-approved by the District Supervisor to demonstrate compliance with the percent sulfur limit in fuel oil. All such records shall be maintained for a period of at least five years following the date of such records and made available to the Division upon request. **(R 336.1401, R 336.1201(3), Michigan State Implementation Plan)**
3. For compliance with SC II.1, the permittee shall keep records of the sulfur content, amount of coal burned on a calendar day basis, and type of coal on a calendar day basis as it is fired in each boiler in FG-BOILER_9A&16-19 in lieu of Part 75, quality-assured data to calculate the calendar month average (tons/month) and the calendar year average (tons/year) Sulfur Dioxide mass emissions. All such records shall be maintained for a period of at least five years following the date of such records and made available to the Division upon request. **(R 336.1401, R 336.1201(3), Michigan State Implementation Plan)**

4. The permittee shall implement and maintain a quality assurance and quality control program as described in 40 CFR Part 75 for the continuous monitoring devices installed. **(40 CFR Part 75, R 336.1401(1), 40 CFR Part 52.21(d), Michigan State Implementation Plan, R 336.2804, Section 110 CAA)**

VII. REPORTING

1. Permittee shall submit to the District Supervisor of the Air Quality Division, within 30 days of the end of the calendar quarter, a written report for each calendar quarter which shall include days of operation and sulfur dioxide daily emission rate averages. **(R336.1401, R 336.1201(3))**
2. For the continuous monitoring system for the measurement of opacity, The permittee shall submit to the District Supervisor and Technical Programs Unit Supervisor, Air Quality Division, within 30 days of the end of the calendar quarter, a written report for each calendar quarter which shall include all of the following information:
 - a. Excess emissions, corrective action taken and the nature and cause of excess emissions, if know, as follows: For opacity measurements, the report shall consist of the magnitude, in actual percent opacity, of all 6-minute averages of opacity more than the applicable opacity standard for each hour of operation (all allowable exceptions are to be deducted prior to determining the excess averages of opacity). Average values shall be obtained by integration over the averaging period or by arithmetically averaging a minimum of 24 equally spaced, instantaneous opacity measurements per 6 minutes.
 - b. The date and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of repairs or adjustments made.
 - c. If the monitoring system has not been inoperative, repaired, or adjusted, and if no excess emissions occurred, a statement attesting to this fact. **(R 336.1201(3), R336.2170(1); Title 1 (Air Pollution Prevention and Control) of the Clean Air Act, Section 114(a), R 336.1201(3))**

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. SV0006	174	559	40 CFR Part 52.21 Subparts (c) and (d)
2. SV0007	192	561.5	40 CFR Part 52.21 Subparts (c) and (d)

IX. OTHER REQUIREMENTS

1. The permittee shall comply with the acid rain permitting provisions of 40 CFR Part 72.1 to 72.94 as outlined in a complete Phase II Acid Rain permit issued by the AQD. The Phase II Acid Rain Permit is incorporated into ROP No. 199600204 as Appendix 9. **(R 336.1299)**
2. 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 and 40 CFR Part 72.9(c)(1)(i). **(R 336.1201(3))**
3. Permittee shall comply with a NO_x Budget Trading permitting provisions of 40 CFR Part 96.1 to 96.88 as outlined in any complete NO_x Budget Trading permit issued by the AQD. **(R 336.1802)**
4. The permittee shall comply with all applicable provisions of the National Emissions Standards for Hazardous Air Pollutants as set forth in 40 CFR Part 63 Subparts A and UUUUU for FG-BOILER_9A&16-19. All records shall be kept on file for a period of at least five years and made available to the AQD upon request. **(40 CFR 63 Subparts A and UUUUU)**

Footnotes:

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

The following conditions apply to: EU-BOILER 9A

DESCRIPTION: Boiler 9A; a tangentially fired boiler with 520 MW nameplate capacity.

Flexible Group ID: N/A

POLLUTION CONTROL EQUIPMENT: Low NO_x Burners and Electrostatic Precipitator, with emissions vented to ambient air through stack SV0007.

I. EMISSION LIMITS

The Permittee shall comply with the following emission limits effective April 16, 2016, through December 31, 2016:

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. SO ₂	90.78 tons per day	Calendar Day	EU-BOILER_9A	SC VI.1, SC VI.2, SC VI.3, SC VI.5	R336.1201(3)
2. SO ₂	16,505 tpy	Remaining portion of calendar year (April 16, 2016, through December 31, 2016)	EU-BOILER_9A	SC VI.1, SC VI.2, SC VI.3, SC VI.5	R336.1201(3)
3. PM	0.15 pounds per 1000 pounds exhaust gases on a wet basis, corrected to 50% excess air.	Test Protocol	EU-BOILER_9A	SC V.I	R336.1331

The Permittee shall comply with the following emission limits effective January 1, 2017:

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. SO ₂	90.78 tons per day	Calendar day	EU-BOILER_9A	SC VI.1, SC VI.2, SC VI.3, SC VI.5	R 336.2804, 40 CFR 52.21(d), Section 110 of CAA
2. SO ₂	23,841 tpy	12-month rolling time period, as determined at the end of each calendar month	EU-BOILER_9A	SC VI.1, SC VI.2, SC VI.3, SC VI.5	R 336.2804, 40 CFR 52.21(d), Section 110 of CAA
3. SO ₂	5,907 pph	720 – clock hour rolling average, as determined at the end of each calendar day	EU-BOILER_9A	SC VI.1, SC VI.2, SC VI.3, SC VI.5	R 336.2804, 40 CFR 52.21(d), Section 110 of CAA

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
4. PM	0.15 pounds per 1,000 pounds exhaust gases on a wet basis, corrected to 50% excess air.	Test Protocol*	EU-BOILER_9A	SC V.1	R 336.1331
* Test protocol shall specify averaging time					

II. MATERIAL LIMITS

1. The sulfur content of the coal as fired to EU-BOILER_9A shall not exceed 0.83 pound per million BTU's heat input, based on a monthly average. The permittee shall demonstrate compliance with this limit using either continuous emission monitors (CEM) and associated data acquisition and handling system (DAHS) or based on the sulfur content and heat content in the coal. **(R336.1201(3), R 336.1401, Michigan State Implementation Plan)**
2. The sulfur content of the distillate oil (No. 2 fuel oil) as fired in EU-BOILER_9A shall not exceed 0.3 percent by weight. **(R 336.1401, Michigan State Implementation Plan)**

III. PROCESS/OPERATIONAL RESTRICTION

1. Permittee shall only burn coal or distillate fuel oil (No. 2 fuel oil) in EU-BOILER_9A. **(R 336.1401)**
2. EU-BOILER_9A shall be operated with low NO_x burners installed and operated properly. **(40 CFR Part 52.21(b)(2)(iii)(h), R 336.1910)**
3. EU-BOILER_9A shall be operated with the electrostatic precipitators (ESP) installed and operating properly to insure that the stack emissions meet the applicable emission limits. **(R336.1301, R336.1331, R336.1910)**
4. Permittee shall maintain and implement a Malfunction Abatement Plan (MAP) for EU-BOILER_9A. The MAP will address the Low NO_x Burners and the Electrostatic Precipitator. In addition, the MAP will also address abnormal conditions, startup/shutdown, malfunctions and excess emissions. **(R 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER

1. The permittee shall not operate the ESP unless each is equipped with a saturable core reactor, silicon-controlled rectifier linear reactor, or equivalent type automatic control system. **(R 336.1910)**
2. Each transformer-rectifier set of the ESP shall be capable of operating at the optimum spark-limited mode and shall meter and display the primary RMS voltage and amperage, the average secondary amperage, and the average spark rate. The requirements to meter and display average spark rate shall not apply if the automatic controller employs solid state circuitry to preset power levels based on sparking rate limits. **(R 336.1910)**

V. TESTING/SAMPLING

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

1. The permittee shall verify the particulate matter emission rate from EU-BOILER_9A within five years of issuance of Permit to Install No. 125-11C by testing at the owner's expense, in accordance with Department requirements. Stack testing procedures and the location of the stack testing ports shall be in accordance with federal EPA Method 5 or other AQD approved test method. No less than 30 days prior to testing, a complete test plan shall be submitted 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 336.1331)**

VI. MONITORING/RECORDKEEPING

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

1. Permittee shall monitor and record the sulfur dioxide, nitrogen oxide, stack gas flow, carbon dioxide, and opacity on a continuous basis in a manner and with instrumentation acceptable to the Air Quality Division and according to the monitoring requirements in 40 CFR Part 75. **(R 336.1401, 40 CFR 75)**
2. The permittee shall maintain a complete record of fuel oil specifications and/or fuel analysis for each delivery, or storage tank, of fuel oil, and the amount of fuel oil combusted on a calendar day basis in EU-BOILER_9A in lieu of Part 75, quality-assured data to calculate the calendar month average (tons/month) and the calendar year average (tons/year) Sulfur Dioxide mass emissions. These records may include purchase records for ASTM specification fuel oil, specifications or analysis specified by the vendor at the time of delivery, analytical results from laboratory testing, or any other records pre-approved by the District Supervisor to demonstrate compliance with the percent sulfur limit in fuel oil. All such records shall be maintained for a period of at least five years following the date of such records and made available to the Division upon request. **(R 336.1401, R 336.1201(3), Michigan State Implementation Plan)**
3. For compliance with SC II.1, the permittee shall keep records of the sulfur content, amount, and type of coal as it is fired in EU-BOILER_9A in lieu of Part 75, quality-assured data to calculate the calendar month average (tons/month) and the calendar year average (tons/year) Sulfur Dioxide mass emissions. All such records shall be maintained for a period of at least five years following the date of such records and made available to the Division upon request. **(R 336.1401, R 336.1201(3), Michigan State Implementation Plan)**
4. The permittee shall implement and maintain a quality assurance and quality control program as described in 40 CFR Part 75 for the continuous monitoring devices installed. **(40 CFR Part 75, R 336.1401(1), 40 CFR Part 52.21(d), Michigan State Implementation Plan, R 336.2804, Section 110 CAA)**
5. On and after January 1, 2017 the permittee shall monitor and record SO₂ emissions and exhaust gas flow on a continuous basis following the monitoring requirements in 40 CFR Part 75. The continuous emission monitoring system (CEMS) for SO₂, specified in 40 CFR Part 75, shall be used for compliance demonstrations with the SO₂ emission limitations in subdivision (a) during each calendar day in which the SO₂ CEMS collects at least one quality-assured monitor operating hour, as defined in 40 CFR Part 72.2. When a SO₂ CEMS collects at least one hour but less than twenty-four hours of quality-assured data, resulting in between one and twenty-three hours, inclusive, within the calendar day in which the SO₂ CEMS is not operating or operating "out-of-control" as defined in 40 CFR Part 72.2, the company shall implement the procedure in Subpart D of 40 CFR Part 75 to calculate SO₂ emissions for hours in which quality-assured data was not collected. When a SO₂ CEMS fails to collect at least one quality-assured monitor operating hour within a calendar day, the company shall determine the SO₂ emission rate for each hour without quality-assured CEMS data by collecting at least one sample during the calendar day to determine the heat content and sulfur content of the coal combusted within the emission unit and by determining the amount of coal combusted in the emission unit during the calendar day, using methods acceptable to the department. **(R 336.2804, 40 CFR 52.21(d), Section 110 CAA)**

VII. REPORTING

1. Permittee shall submit to the District Supervisor of the Air Quality Division, within 30 days of the end of the calendar quarter, a written report for each calendar quarter which shall include days of operation and sulfur dioxide daily emission rate averages. **(R336.1401, R 336.1201(3))**

2. For the continuous monitoring system for the measurement of opacity, The permittee shall submit to the District Supervisor and Technical Programs Unit Supervisor, Air Quality Division, within 30 days of the end of the calendar quarter, a written report for each calendar quarter which shall include all of the following information:
 - a. Excess emissions, corrective action taken and the nature and cause of excess emissions, if known, as follows: For opacity measurements, the report shall consist of the magnitude, in actual percent opacity, of all 6-minute averages of opacity more than the applicable opacity standard for each hour of operation (all allowable exceptions are to be deducted prior to determining the excess averages of opacity). Average values shall be obtained by integration over the averaging period or by arithmetically averaging a minimum of 24 equally spaced, instantaneous opacity measurements per 6 minutes.
 - b. The date and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of repairs or adjustments made.
 - c. If the monitoring system has not been inoperative, repaired, or adjusted, and if no excess emissions occurred, a statement attesting to this fact. **(R 336.1201(3), R336.2170(1); Title 1 (Air Pollution Prevention and Control) of the Clean Air Act, Section 114(a), R 336.1201(3))**

3. Starting with the first calendar quarter of 2017 and every quarter thereafter, as described in 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report and summary report in an acceptable format to the department 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 excess emission report shall include the following information:
 - a. A report of each exceedance above the SO₂ limitations. This includes the date, time, magnitude, cause and corrective actions for all occurrences during the reporting period.
 - b. A report of all periods of continuous emission monitoring system downtime, any downtime sampling and analysis completed, and corrective action.
 - c. A report of any periods that any component of the continuous emission monitoring system exceeds the instrument range.
 - d. If no exceedances or continuous emission monitoring system downtime occurred during the reporting period, the company shall report that fact.**(R 336.2804, 40 CFR 52.21(d), Section 110 CAA)**

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. SV0007	192	561.5	40 CFR Part 52.21 Subparts (c) and (d)

IX. OTHER REQUIREMENTS

1. The permittee shall comply with the acid rain permitting provisions of 40 CFR Part 72.1 to 72.94 as outlined in a complete Phase II Acid Rain permit issued by the AQD. The Phase II Acid Rain Permit is incorporated into ROP No. 199600204 as Appendix 9. **(R 336.1299)**
2. 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 and 40 CFR Part 72.9(c)(1)(i). **(R 336.1201(3))**
3. Permittee shall comply with a NO_x Budget Trading permitting provisions of 40 CFR Part 96.1 to 96.88 as outlined in any complete NO_x Budget Trading permit issued by the AQD. **(R 336.1802)**
4. The permittee shall comply with all applicable provisions of the National Emissions Standards for Hazardous Air Pollutants as set forth in 40 CFR Part 63 Subparts A and UUUUU for EU-BOILER_9A. All records shall be kept on file for a period of at least five years and made available to the AQD upon request.
(40 CFR 63 Subparts A and UUUUU)

Footnotes:

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

APPENDIX I
EES COKE PERMIT TO INSTALL 51-08C

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

November 21, 2014

PERMIT TO INSTALL
51-08C

ISSUED TO
EES Coke Battery, LLC

LOCATED AT
1400 Zug Island
River Rouge, Michigan

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
P0408

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).

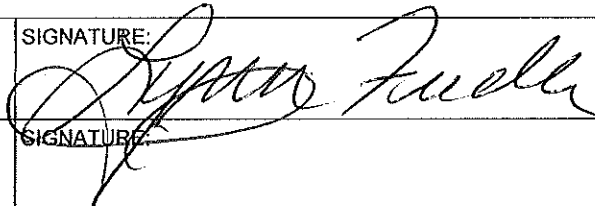
DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203:

September 4, 2014

DATE PERMIT TO INSTALL APPROVED:

November 21, 2014

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

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

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**

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

SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

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

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EUCOKE-BATTERY	Rebuilt No. 5 coke oven battery consisting of eighty-five, six-meter high ovens with an integral heating system and a coke oven gas (COG) flare. The following emission control devices are part of the battery: overpressure bleeder flares, pushing emission control system (PECS) baghouse, and a quench tower.	11-24-1992 / 02-07-1997 / 11-21-2014	FGMACTL, FGMACTCCCC
EUCOKE-BYPRODUCT	The by-products plant includes the exhausters that draw the gases off the No. 5 coke oven battery and all the process vessels required to separate the phenols, tars, light oils, and ammonia from the coke oven gas. This occurs by passing the gas and fluids through a series of process decanters, condensers, heat exchangers, and stills. The by-products plant also includes storage tanks, and light oil loading operations.	04-12-1970 / 11-24-1992	FGNESHAPL,V,&FF
EUMATERIALS	Coal transfer, crushing and screening including a battery coal bin; coke transfer and screening; and transport of coal and coke.	04-12-1970 / 11-24-1992 / 11-21-2014	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: EUCKE-BATTERY

DESCRIPTION: Rebuilt No. 5 coke oven battery consisting of eighty-five, six-meter high ovens with an integral heating system and a coke oven gas (COG) flare.

Flexible Group ID: FGMACTL, FGMACTCCCC

POLLUTION CONTROL EQUIPMENT: Overpressure bleeder flares, pushing emission control system (PECS) baghouse, quench tower

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. CO	437.3 pph	8-hr block average	Underfire combustion stack - EUCKE-BATTERY	SC VI.3, SC VI.6	R 336.1221 ³ , R 336.2908 ³ , 40 CFR 52.21(d)
2. NO _x	1,411 tpy	12-month rolling time period as determined at the end of each calendar month	Underfire combustion stack - EUCKE-BATTERY	SC VI.3, SC VI.7	R 336.2803, R 336.2804
3. NO _x	563.5 pph	Hourly	Underfire combustion stack - EUCKE-BATTERY	SC VI.3, SC VI.7	R 336.2803, R 336.2804
4. NO _x	0.75 lb/MMBtu heat input	12-month rolling average as determined at the end of each calendar month	Underfire combustion stack - EUCKE-BATTERY	SC VI.3, SC VI.7	R 336.2810
5. NO _x	1.25 lb/MMBtu heat input	24-hr rolling average	Underfire combustion stack - EUCKE-BATTERY	SC VI.3, SC VI.7	R 336.2810
6. NO _x	2.61 pph	Test protocol shall specify averaging time.	PECS baghouse stack - EUCKE-BATTERY	SC V.2	R 336.2803, R 336.2804, R 336.2810
7. PM	0.095 lb per 1000 lb of exhaust gases, corrected to 50% excess air	Test protocol shall specify averaging time.	Underfire combustion stack - EUCKE-BATTERY	SC V.1	R 336.1331(1)(a)
8. PM	0.012 gr/dscf (excluding sulfates)	Test protocol shall specify averaging time.	Underfire combustion stack - EUCKE-BATTERY	SC V.1	R 336.1221 ³ , R 336.2908 ³
9. PM	25.7 pph (excluding sulfates)	Test protocol shall specify averaging time.	Underfire combustion stack - EUCKE-BATTERY	SC V.1	R 336.1221 ³ , R 336.2908 ³
10. PM	9.7 tpy	Test protocol shall specify averaging time.	PECS baghouse stack - EUCKE-BATTERY	SC V.2	R 336.1221 ³ , R 336.2908 ³
11. PM	0.02 lb/ton of coke pushed	Test protocol shall specify averaging time.	PECS baghouse stack - EUCKE-BATTERY	SC V.2	R 336.1221 ³ , R 336.1331(1)(c), R 336.2908 ³
12. PM10	73.3 pph	Test protocol shall specify averaging time.	Underfire combustion stack - EUCKE-BATTERY	SC V.1	40 CFR 52.21(c) and (d)
13. PM10	0.69 pph	Test protocol shall specify averaging time.	PECS baghouse stack - EUCKE-BATTERY	SC V.2	40 CFR 52.21(c) and (d)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
14. PM _{2.5}	73.0 pph	Test protocol shall specify averaging time.	Underfire combustion stack - EUCKE-BATTERY	SC V.1	40 CFR 52.21(c) and (d)
15. PM _{2.5}	0.69 pph	Test protocol shall specify averaging time.	PECS baghouse stack - EUCKE-BATTERY	SC V.2	40 CFR 52.21(c) and (d)
16. SO ₂	2,071 tpy	12-month rolling time period as determined at the end of each calendar month	Underfire combustion stack - EUCKE-BATTERY	SC VI.3, SC VI.8	R 336.1205(1)(a) and (1)(b), 40 CFR 52.21(c) and (d)
17. SO ₂	544.6 pph	3-hr block average	Underfire combustion stack - EUCKE-BATTERY	SC VI.3, SC VI.8	40 CFR 52.21(c) and (d)
18. SO ₂	0.702 lb/1,000 scf of COG	1-hr average	Underfire combustion stack - EUCKE-BATTERY	SC VI.3, SC VI.9	R 336.1205(1)(a) and (1)(b), Section 110 of the CAA
19. VOC	43.1 pph	Test protocol shall specify averaging time.	Underfire combustion stack - EUCKE-BATTERY	SC V.1	R 336.1220 ⁴ , R 336.2908 ⁴
20. VOC	0.0956 lb/MMBtu heat input	Test protocol shall specify averaging time.	Underfire combustion stack - EUCKE-BATTERY	SC V.1	R 336.1702(a)
21. Visible emissions	20% opacity	6-minute average	Underfire combustion stack - EUCKE-BATTERY	SC VI.2, SC VI.5	R 336.1221 ³ , R 336.1301(1)(c), R 336.2908 ³
22. Visible emissions	15% opacity	Average of 6 consecutive readings taken at 15 second intervals	PECS baghouse stack - EUCKE-BATTERY	SC VI.10, SC VI.11	R 336.1221 ³ , R 336.1301(1)(c), R 336.2908 ³

23. There shall be no visible emissions from the charging lids on EUCKE-BATTERY except that a visible emission may be emitted from no more than 1% of all charging lids. Compliance with the limit shall be determined using reference method 9B. (R 336.1221³, R 336.1301(1)(c), R 336.2031, R 336.2908³)
24. There shall be no visible emissions from the charging of coal to EUCKE-BATTERY except that a visible emission may be emitted for a period or periods aggregating 55 seconds during any five consecutive charges. Compliance with the limit shall be determined using reference method 9B. (R 336.1221³, R 336.1350, R 336.2031, R 336.2908³)
25. Fugitive visible emissions during the pushing and travel operations on EUCKE-BATTERY shall not exceed 20% opacity as determined instantaneously. Instantaneous readings shall not be averaged and shall be taken at 15-second intervals for the duration of the pushing and travel operations. The observer shall be positioned in accordance with the provisions of reference method 9B. (R 336.1221³, R 336.2031, R 336.2908³)
26. There shall be no visible emissions from the standpipes/offtakes on EUCKE-BATTERY except that a visible emission may be emitted from no more than 4% of all standpipe assembly emission points. Compliance with the limit shall be determined using reference method 9B. (R 336.1221³, R 336.1353, R 336.2031, R 336.2908³)
27. The permittee shall not cause or permit to be discharged into the outer air any visible emission from the coke oven gas collector main, except when spooning the main or when the emergency relief valve opens. (R 336.1355)

28. There shall be no visible emissions from the push side doors, the coke side doors, nor the leveling doors on EUCKE-BATTERY except that a visible emission may be emitted from no more than 5% of all doors, not including the last oven charged. The total number of doors on EUCKE-BATTERY shall be based upon two doors per oven. Compliance with the limit shall be determined using reference method 9B. (R 336.1221³, R 336.2031, R 336.2908³)

II. MATERIAL LIMITS

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Dry coal charged	1,420,000 tpy	12-month rolling time period as determined at the end of each calendar month	EUCKE-BATTERY	SC VI.16	R 336.1205(1)(a) and (1)(b)
2. Dry coal charged	125,000 tons/month	Calendar month	EUCKE-BATTERY	SC VI.16	R 336.1205(1)(a) and (1)(b), R 336.1225
3. Heavy tar sludge charged	836,000 gallons/yr	12-month rolling time period as determined at the end of each calendar month	EUCKE-BATTERY	SC VI.16	R 336.1205(1)(a) and (1)(b), R 336.1225
4. No. 2 fuel oil charged	1,365,000 gallons/yr	12-month rolling time period as determined at the end of each calendar month	EUCKE-BATTERY	SC VI.16	R 336.1205(1)(a) and (1)(b), R 336.1225
5. No. 2 fuel oil sulfur content	0.50% by weight	Instantaneous	EUCKE-BATTERY	SC VI.22	R 336.1205(1)(a) and (1)(b)
6. Total dissolved solids (TDS) content of quenching water	Less than 800 mg/liter	Weekly composite at minimum of 3 samples collected on separate days	EUCKE-BATTERY	SC V. 4	R 336.1205(1)(a) and (1)(b), R 336.1221 ³ , R 336.1331(1)(c), R 336.2908 ³

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate EUCKE-BATTERY unless a malfunction abatement plan (MAP) as described in Rule 911(2), for the process and emission control equipment 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 60 days after such an event occurs. The permittee shall also amend the MAP within 60 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 336.1205, R 336.1910, R 336.1911)**

2. The volatile matter in the coke produced by EUCKE-BATTERY shall not exceed 0.94 percent by weight, based upon a daily composite sample, on a 12-month rolling basis. **(R 336.1205, R 336.1220⁴, R 336.1702(a), R 336.2908⁴)**
3. The permittee shall not cause or permit any standpipe lid to be open for decarbonization on any coke oven which is more than 3 ovens ahead of the oven being pushed. **(R 336.1354)**
4. If dry coal charged to EUCKE-BATTERY exceeds 1,300,000 tpy on a 12-month rolling time period, the permittee shall send excess COG to a separate stationary source in accordance with the following formula:

Excess COG (MMBtu/yr) = (x - 1.3E06 tpy dry coal) * (MMBtu COG generation / ton dry coal)

Where x = the amount of dry coal charged in tpy.

(R 336.1205)

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate EUCKE-BATTERY unless the overpressure bleeder flares, PECS baghouse, and quench tower are installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with an approved MAP as required in SC III.1. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.1910, 40 CFR 52.21(c) and (d))**
2. The permittee shall install, maintain, and operate, in a satisfactory manner, the EUCKE-BATTERY overpressure bleeder flares and the COG flare with automatic ignition systems. **(R 336.1205, R336.1910)**
3. The permittee shall not push coke from EUCKE-BATTERY unless the pushing emission control system (PECS) is installed, maintained, and operated in a satisfactory manner. Pushing emissions from EUCKE-BATTERY shall be captured by a belted duct collection system connected to the PECS baghouse. **(R 336.1205, R 336.1910)**
4. The baffles in the EUCKE-BATTERY quench tower shall be kept in a good state of repair. **(R 336.1205, R 336.1910)**
5. The permittee shall only use acceptable makeup water in the EUCKE-BATTERY quench tower. Acceptable makeup water is defined as surface water from a river, lake, or stream; water meeting drinking water standards; storm water runoff and production area cleanup water except for water from the by-product recovery plant area; process wastewater treated to meet effluent limitations guidelines in 40 CFR 420; water from any of these sources that has been used only for non-contact cooling or in water seals; or water from scrubbers used to control pushing emissions. Waste water recycled from EUCKE-BYPRODUCT is not acceptable makeup water. **(R 336.1205, R 336.1221³, R 336.1331, R 336.2908³)**
6. The permittee shall install, calibrate, maintain and operate, in a satisfactory manner, a device to monitor the pressure drop across the PECS baghouse on a continuous basis. **(R 336.1301, R 336.1331, R 336.1910)**

V. TESTING/SAMPLING

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

1. The permittee shall verify PM, PM10, PM2.5, and VOC emission rates from the underfire combustion stack on EUCKE-BATTERY by testing at owner's expense, in accordance with Department requirements. The testing shall be repeated every two years. 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. Testing methods for PM, PM10, and PM2.5 are listed in Appendix A. 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 Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1220⁴, R 336.1221³, R 336.1331, R 336.1702, R 336.2001, R 336.2003, R 336.2004, R 336.2908^{3,4}, 40 CFR 52.21(c) and (d))**
2. The permittee shall verify NO_x, PM, PM10, and PM2.5 emission rates from the PECS baghouse stack on EUCKE-BATTERY by testing at owner's expense, in accordance with Department requirements. The testing shall be repeated every two years. 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. Verification of emission rates includes the submittal of 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 336.1221³, R 336.1331, R 336.2803, R 336.2804, R 336.2810, R 336.2001, R 336.2003, R 336.2004, R 336.2908³, 40 CFR 52.21(c) and (d))**
3. The permittee shall sample the TDS content of the quench water in the quench tower for EUCKE-BATTERY on a weekly basis. The TDS content shall be based on a weekly composite, with a minimum of three samples of equal volume, collected on separate calendar days during the same calendar week. The permittee must submit any request for a change in the sampling frequency and methods to the AQD District Supervisor for review and approval. **(R 336.1205, R 336.1221³, R 336.1331, R 336.2908³)**
4. At least once each calendar month, the permittee shall sample the volatile matter content of the coke produced by EUCKE-BATTERY. The volatile matter content shall be based on an average of 3 samples for a calendar day composite. The permittee must submit any request for a change in the sampling frequency and methods to the AQD District Supervisor for review and approval. **(R 336.1205, R 336.1220⁴, R 336.1702(a), R 336.2908⁴)**

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 and 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 336.1220⁴, R 336.1221³, R 336.1225, R 336.1299, R 336.1301, R 336.1331, R 336.1702(a), R 336.2803, R 336.2804, R 336.2810, R 336.2908^{3,4}, 40 CFR 52.21(c) and (d))**
2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the opacity from the underfire combustion stack on EUCKE-BATTERY on a continuous basis. The COM shall be operated in accordance with procedures outlined in Appendix B. **(R 336.1221³, R 336.1301, R 336.2908³)**
3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner device(s) to monitor and record the CO, NO_x, and SO₂ emissions, and oxygen or carbon dioxide (O₂ or CO₂) content of the exhaust gas from the underfire combustion stack on EUCKE-BATTERY on a continuous basis. The CEM and continuous emission rate monitoring system (CERMS) shall be operated according to procedures in Appendix C. **(R 336.1205, R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c) and (d))**

4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the exhaust gas flow rate from the underfire combustion stack on EUCKE-BATTERY on a continuous basis. The monitor shall be operated in accordance with procedures outlined in Appendix C. **(R 336.1205, R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c) and (d))**
5. The permittee shall keep, in a satisfactory manner, continuous opacity data records for the underfire combustion stack on EUCKE-BATTERY, as described in emission limit SC I.20. **(R 336.1221³, R 336.1301, R 336.2908³)**
6. The permittee shall keep, in a satisfactory manner, hourly and 8-hr block average (starting at midnight) CO emission rate records for the underfire combustion stack on EUCKE-BATTERY, as described in emission limit SC I.1. Beginning September 1, 2015, data substitution for each hour of monitor downtime shall use the average measured of the last known valid hour prior to the downtime and the next valid hour after the downtime. **(R 336.1221³, 40 CFR 52.21(d), R 336.2908³)**
7. The permittee shall keep, in a satisfactory manner, hourly, 24-hr rolling average, monthly, and 12-month rolling NO_x emission rate records for the underfire combustion stack on EUCKE-BATTERY, as described in emission limits SC I.2, SC I.3, SC I.4, and SC I.5. Beginning September 1, 2015, data substitution for each hour of monitor downtime shall use the average measured of the last known valid hour prior to the downtime and the next valid hour after the downtime. **(R 336.2803, R 336.2804, R 336.2810)**
8. The permittee shall keep, in a satisfactory manner, hourly, 3-hr block average (starting at midnight), monthly, and 12-month rolling SO₂ emission rate records for the underfire combustion stack on EUCKE-BATTERY, as described in emission limits SC I.16 and SC I.17. Beginning September 1, 2015, data substitution for each hour of monitor downtime shall use the average measured of the last known valid hour prior to the downtime and the next valid hour after the downtime. **(R 336.1205, 40 CFR 52.21(c) and (d))**
9. The permittee shall keep, in a satisfactory manner, 1-hr average (starting at midnight) SO₂ emission rate records for the underfire combustion stack on EUCKE-BATTERY, as described in emission limit SC I.18. Beginning September 1, 2015, data substitution for each hour of monitor downtime shall use the average measured of the last known valid hour prior to the downtime and the next valid hour after the downtime. **(R 336.1205, Section 110 of the CAA)**
10. The permittee shall perform and document non-certified visible emissions observations, on a weekly basis, for the PECS baghouse during a minimum of one pushing event. If during the observation there are any visible emissions detected from an emission point, a reference method 9B certified visible emissions observation shall be conducted for a minimum of three pushing events to determine the actual opacity from that emission point. Records of the non-certified visible emissions observations, reference method 9B observations that are performed, the reason for any visible emissions observed and any corrective actions taken shall be kept on file and in a format acceptable to the AQD. **(R 336.1301, R 336.1910, R 336.1911, R 336.2031(e))**
11. The permittee shall perform a reference method 9B certified visible emission observation of the PECS baghouse at least once a month during a minimum of three pushing events. The permittee shall initiate corrective action upon observation of visible emissions exceeding applicable visible emission limits. Records of the reference method 9B observations that are performed, the reason for any visible emissions observed and any corrective actions taken shall be kept on file in a format acceptable to the AQD District Supervisor. **(R 336.1221³, R 336.1301, R 336.1910, R 336.1911, R 336.2031(e), R 336.2908³)**

12. The permittee shall perform daily reference method 9B certified visible emission observations from charging, pushing and traveling operations, standpipes/offtakes, the coke oven gas collector main, push side doors, the coke side doors, and the leveling doors. The permittee shall initiate corrective action upon observation of visible emissions exceeding applicable visible emission limits. Records of the reference method 9B observations that are performed, the reason for any visible emissions observed and any corrective actions taken shall be kept on file in a format acceptable to the AQD District Supervisor. **(R 336.1221³, R 336.1301, R 336.1355, R 336.2031, R 336.2908³)**
13. The permittee shall record, in a satisfactory manner, the daily pressure drop across the PECS baghouse. The permittee shall initiate appropriate maintenance activity on the baghouse if the pressure drop exceeds the normal range as specified in an approved MAP as required in SC III.1. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1301, R 336.1331, R 336.1910, R 336.1911)**
14. The permittee shall conduct regular inspections of the operational condition of the PECS baghouse. These inspections shall be conducted during scheduled outages or downtimes, and as soon as practicable after observing visible emissions, but not less frequently than at least once every month. Records of each inspection, the reason for any visible emissions observed, and any corrective actions taken shall be kept on file in a format acceptable to the AQD District Supervisor. **(R 336.1221³, R 336.1301, R 336.1331, R 336.1910, R 336.1911, R 336.2908³)**
15. The permittee shall conduct regular inspections of the operational condition of the baffles in the quench tower. These inspections shall be conducted during scheduled outages or downtimes, and as soon as practicable after observing visible emissions or fallout, but not less frequently than at least once every month. Records of each inspection, the reason for any visible emissions or fallout observed, and any corrective actions taken shall be kept on file in a format acceptable to the AQD District Supervisor. **(R 336.1221³, R 336.1301, R 336.1331, R 336.1910, R 336.1911, R 336.2908³)**
16. The permittee shall keep, in a satisfactory manner, monthly, and 12-month rolling records of the amount of dry coal, heavy tar sludge, and No. 2 fuel oil charged to EUCKE-BATTERY. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, R 336.1225)**
17. The permittee shall keep, in a satisfactory manner, monthly, and 12-month rolling records of the heat input, fuel gas usage, Btu content of the fuel gas, volatile matter content of the coke produced, and coke production rate for EUCKE-BATTERY. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, R 336.1220⁴, R 336.1225, R 336.2908⁴)**
18. The permittee shall monitor and record the quantity of COG generated per ton of dry coal and the quantity of COG sent to a separate stationary source pursuant to SC III.4 in a manner and with instrumentation acceptable to the AQD District Supervisor. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling records of the amount of COG generated per ton of dry coal and the quantity of coke oven gas sent to a separate stationary source. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205)**
19. The permittee shall monitor and record, in a satisfactory manner, the quantity of coke oven gas vented to the COG flare on a daily basis. The permittee shall keep the records in a format 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, R 336.1225, R 336.1702(a), R 336.1911)**
20. The permittee shall conduct regular inspections to determine the operational condition of the COG flare and automatic ignition system at least once every 6 months. A log of the inspection, cause(s) of malfunction or failure, repairs made and corrective actions taken shall be kept and maintained in a format 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, R 336.1225, R 336.1702(a), R 336.1911)**

21. The permittee shall keep, in a satisfactory manner, daily records of the operation of overpressure bleeder flare system for EUCKE-BATTERY. Records shall include the number, duration, and reason of overpressure bleeder flare system operation. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, R 336.1225)**
22. The permittee shall maintain a record of the analysis for each shipment of No. 2 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 No. 2 fuel oil. **(R 336.1205)**

VII. REPORTING

1. The permittee shall provide notice of all emergency malfunctions of the overpressure bleeder flare system resulting in emissions of coke oven gas from EUCKE-BATTERY. The notice shall include the reason for the malfunction, corrective actions taken, duration of the malfunction, quantity of coke oven gas released, and estimated emissions. All malfunctions involving operation of the overpressure bleeder flare system shall be reported to the AQD District Supervisor no later than 24 hours after the event. The permittee shall submit the notice within 30 days. **(R 336.1205, R 336.1910, R 336.1912)**
2. The permittee shall report, in a satisfactory manner, the 1-hr average SO₂ emission rate as described in emission limit SC I.18 on a quarterly basis including any data substitution for each hour of monitor downtime. The records shall be reported within 30 days following the end of the calendar quarter in a format acceptable to the AQD District Supervisor. **(R 336.1205, Section 110 of the CAA)**
3. The permittee shall furnish to the AQD District Supervisor, within 21 days of receipt of request, any records required by SC VI.1 through SC VI.22 for EUCKE-BATTERY. **(R 336.1205, R 336.1912)**

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. SVCKE-UNDERFIRE (Combustion Stack)	219.6	315	R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d)
2. SVCKE-PECSBGHS	120	115	R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d)
3. SVCKE-COGFLARE	36	134	R 336.1225, 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 National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR 63, Subparts A and L, as they apply to EUCKE-BATTERY. **(40 CFR 63, Subparts A and L)**
2. The permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR 63, Subparts A and CCCCC, as they apply to EUCKE-BATTERY. **(40 CFR 63, Subparts A and CCCCC)**

Footnotes:

- ³ This condition was established pursuant to Rule 221 as it applied at the time of initial permitting in 1990. This limit was part of nonattainment New Source Review which required LAER for CO and PM, and offsets for PM. Rule 221 has been rescinded, and the current equivalent Rule 1908 is cited in addition. However, this condition is not the result of any analysis performed under Rule 1908.
- ⁴ This condition was established pursuant to Rule 220 as it applied at the time of initial permitting in 1990. This limit was part of nonattainment New Source Review which required LAER for VOC, and offsets for VOC. Rule 221 has been rescinded, and the current equivalent Rule 1908 is cited in addition. However, this condition is not the result of any analysis performed under Rule 1908.

The following conditions apply to: EUCKE-BYPRODUCT

DESCRIPTION: The by-products plant includes the exhausters that draw the gases off the No. 5 coke oven battery and all the process vessels required to separate the phenols, tars, light oils, and ammonia from the coke oven gas. This occurs by passing the gas and fluids through a series of process decanters, condensers, heat exchangers, and stills. The by-products plant also includes storage tanks, and light oil loading operations.

Flexible Group ID: FGNESHAPL,V,&FF

POLLUTION CONTROL EQUIPMENT: Nitrogen gas blanketing system

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not vent raw coke oven gas that has not been processed in EUCKE-BYPRODUCT to the COG flare. **(R 336.1205, R 336.1225, R 336.1702(a))**

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

1. The permittee shall monitor for benzene leaks from the by-products plant equipment using Method 21 or other methods as approved by the AQD District Supervisor. The frequency of leak testing is as follows:
 - a. Monthly for pump seals
 - b. Quarterly for flanges, valves and exhausters
 - c. Semi-annually for blanketing systems
 - d. Annually for difficult to monitor equipment
 - e. The frequency of leak tests as required by 40 CFR 61, Subpart V shall prevail over the above indicated frequency if lesser.

The permittee must submit any request for a change in the sampling frequency and methods to the AQD District Supervisor for review and approval. **(R 336.1205, R 336.1299)**

VI. MONITORING/RECORDKEEPING

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

NA

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR 61, Subpart L, as they apply to EUCKE-BYPRODUCT.
(40 CFR 61, Subpart L)
2. The permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR 61, Subpart V, as they apply to EUCKE-BYPRODUCT.
(40 CFR 61, Subpart V)
3. The permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR 61, Subpart FF, as they apply to EUCKE-BYPRODUCT.
(40 CFR 61, Subpart FF)

The following conditions apply to: EUMATERIALS

DESCRIPTION: Coal transfer, crushing and screening including a battery coal bin; coke transfer and screening; and transport of coal and coke.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Coal bin vents, Mixing building baghouse

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Visible emissions	10% opacity	6-minute average	Coal bin vents - EUMATERIALS	SC VI.4	R 336.1301(1)(c)
2. Visible emissions	10% opacity	6-minute average	Mixing building baghouse - EUMATERIALS	SC VI.4	R 336.1301(1)(c)

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. Within 180 days of permit issuance, the permittee shall submit to the AQD District Supervisor a revised program for continuous fugitive dust control for all material handling operations. The program shall be reviewed and approved by the AQD District Supervisor. Subsequently it shall be updated as necessary, and kept at the facility. If at any time the fugitive dust control program fails to address or inadequately addresses an event that meets the characteristics of a revision or update, the permittee shall amend the fugitive dust control program within 60 days after such an event occurs. The permittee shall also amend the fugitive dust control program within 60 days, if new equipment is installed or upon request from the AQD District Supervisor. The permittee shall submit the fugitive dust control program and any amendments to the fugitive dust control program to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the fugitive dust control program or amended fugitive dust control program 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. **(40 CFR 52.21(c) and (d), Act 451 Section 324.5524)**
2. The permittee shall not operate EUMATERIALS unless a malfunction abatement plan (MAP) as described in Rule 911(2), the mixing building baghouse has been submitted within 60 days of permit issuance, and is implemented and 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 60 days after such an event occurs. The permittee shall also amend the MAP within 60 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 336.1301, R 336.1331, R 336.1910, R 336.1911, 40 CFR 52.21(c) and (d))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall install, calibrate, maintain and operate, in a satisfactory manner, a device to continuously monitor the pressure drop across the mixing building baghouse in EUMATERIALS. **(R 336.1301, R 336.1331, 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 complete all required records and 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 336.1301, R 336.1331, R 336.1910)**
2. The permittee shall monitor and keep records, in a satisfactory manner, of the amount of chemical dust suppressant used in the coal crushing and screening, and coke screening buildings, on a monthly basis. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1301, R 336.1910)**
3. The permittee shall keep, in a satisfactory manner, monthly records of the time and duration of each chemical dust suppressant system malfunction and a description of corrective action taken. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1301, R 336.1910)**
4. The permittee shall perform and document non-certified visible emissions observations as required in Emission Limit SC I.1 and I.2 on a daily basis when EUMATERIALS is operating. If during the observation there are any visible emissions detected from an emission point, a USEPA Method 9 certified visible emissions observation shall be conducted for a minimum of 15 minutes to determine the actual opacity from that emission point. Records of the non-certified visible emissions observations, USEPA Method 9 observations that are performed, the reason for any visible emissions observed and any corrective actions taken shall be kept on file and in a format acceptable to the AQD. **(R 336.1301, R 336.1910, R 336.1911)**
5. The permittee shall record, in a satisfactory manner, the daily pressure drop across the mixing building baghouse in EUMATERIALS. The permittee shall initiate appropriate maintenance activity on the baghouse if the pressure drop exceeds the normal range as specified by the manufacturer. **(R 336.1301, R 336.1331, R 336.1910, R 336.1911)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVCOAL - BH	20	48	40 CFR 52.21(c) and (d)

IX. OTHER REQUIREMENTS

1. The permittee shall comply with the requirements specified in the fugitive dust plan per SIP Consent Order No. 27-1993. **(SIP Consent Order No. 27-1993)**

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
FGNESHAPL,V,&FF	The provisions of Subpart L apply to coke by-product recovery plants: tar decanters, tar storage tanks, tar-intercepting sumps, flushing-liquor circulation tanks, light-oil sumps, light-oil condensers, light-oil decanters, wash-oil decanters, wash-oil circulation tanks, final coolers, final-cooler cooling towers, and the following equipment that are intended to operate in benzene service: pumps, valves, exhausters, pressure relief devices, sampling connection systems, open-ended valves or lines, flanges or other connectors, and control devices or systems. The provisions of Subpart V apply to each of the following sources that are intended to operate in volatile hazardous air pollutant (VHAP) service: pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and control devices. The provisions of Subpart FF apply to coke by-product recovery plants because the waste stream is benzene-containing.	EUCCOKE-BYPRODUCT
FGMACTL	The provisions of Subpart L apply to existing by-product coke oven batteries at a coke plant.	EUCCOKE-BATTERY
FGMACTCCCC	The provisions of Subpart CCCCC apply to pushing, soaking, quenching, and battery stacks at coke oven batteries.	EUCCOKE-BATTERY

The following conditions apply to: FGNESHAPL,V,&FF

DESCRIPTION: The provisions of Subpart L apply to coke by-product recovery plants: tar decanters, tar storage tanks, tar-intercepting sumps, flushing-liquor circulation tanks, light-oil sumps, light-oil condensers, light-oil decanters, wash-oil decanters, wash-oil circulation tanks, final coolers, final-cooler cooling towers, and the following equipment that are intended to operate in benzene service: pumps, valves, exhausters, pressure relief devices, sampling connection systems, open-ended valves or lines, flanges or other connectors, and control devices or systems. The provisions of Subpart V apply to each of the following sources that are intended to operate in volatile hazardous air pollutant (VHAP) service: pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and control devices. The provisions of Subpart FF apply to coke by-product recovery plants because the waste stream is benzene-containing.

Emission Units: EUCKE-BYPRODUCT

POLLUTION CONTROL EQUIPMENT: Nitrogen gas blanketing system

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall visually inspect the connections and seals on the gas blanketing system including the ductworks for evidence of visible defects such as gaps or tears by Method 21 on a semi-annual basis, and at any other time after the system is re-pressurized with blanketing gas following removal of the cover or opening of the access latch. **(40 CFR 61, Subpart L, § 61.132(b) and (d))**
2. The permittee shall conduct a maintenance inspection of the control system (gas blanketing system) on an annual basis for system abnormalities. The permittee shall make a first attempt at repair within 5 days, and final repairs within 15 days of leak detection. **(40 CFR 61, Subpart L, § 61.132(c) and (d))**
3. The permittee shall visually inspect the connections and seals on the light oil sump by Method 21 on a semi-annual basis, and at any other time when the cover is removed. The permittee shall make a first attempt at repair within 5 days, and final repairs within 15 days of leak detection. **(40 CFR 61, Subpart L, § 61.133)**
4. No (zero) emissions are allowed from final coolers and final-cooler cooling towers at the coke by-product recovery plant. **(40 CFR 61, Subpart L, § 61.134)**
5. The permittee shall visually inspect each pump in benzene service for indications of liquids dripping from the pump seal on a weekly basis. (Leak indication by Method 21 is a reading greater than or equal to 10,000 ppm or indications of liquid dripping from pump seal.) When a leak is detected, the permittee shall repair the leak within 5 days of detection, or repair any leaks as soon as practicable, but no later than 15 days after detection. **(40 CFR 61, Subpart V, § 61.242-2 (a)(2), (b), and (c))**

6. Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by a Method 21 reading of less than 500 ppm above background. Pressure relief devices in gas/vapor service shall be returned to a condition of no detectable emissions as soon as practicable following a pressure release but no later than 5 days after such release. The permittee shall perform Method 21 monitoring on the pressure relief device in gas/vapor service within 5 days of a pressure release to confirm that it is operating with no detectable emissions. **(40 CFR 61, Subpart V, § 61.242-4)**
7. The permittee shall monitor monthly each valve in benzene service to detect leaks by Method 21. If a leak is detected (reading of 10,000 ppm or greater), a first attempt at repair shall be made within 5 days, and final repairs are to be made as soon as practicable but no later than 15 days after the leak is detected. Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected. If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months. **(40 CFR 61, Subpart V, § 61.242-7(a) through (e))**
8. The permittee shall check pressure relief devices in liquid service and flanges and other connectors during the monthly Method 21 leak monitoring of valves. If evidence of a potential leak is found by visual, audible, olfactory or other method, Method 21 monitoring shall be performed within 5 days. If such monitoring detects a leak (instrument reading of 10,000 ppm or greater) the permittee shall make a first attempt at repair within 5 days and final repair is made as soon as practicable but not later than 15 days after detection. **(40 CFR 61, Subpart V, § 61.242-8)**
9. The permittee may delay of repair for which leaks have been detected if the repair is technically infeasible without process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. **(40 CFR 61, Subpart V, § 61.242-10)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall enclose and seal all opening on each process vessel, tar storage tank, and tar-intercepting sump in the coke by-product recovery plant. **(40 CFR 61, Subpart L, § 61.132(a)(1) and (d))**
2. The permittee shall maintain and operate a closed, positive pressure gas blanketing system utilizing nitrogen gas for each process vessel, tar storage tank, and tar-intercepting sump. **(40 CFR 61, Subpart L, § 61.132(a)(2) and (d))**
3. The permittee shall enclose and seal the liquid surface in the light oil sump to form a closed system to contain emissions in accordance with § 61.133. **(40 CFR 61, Subpart L, § 61.133)**
4. The permittee shall equip each sampling connection system with a closed-purge system or closed vent system. **(40 CFR 61, Subpart V, § 61.242-5)**
5. The permittee shall equip each open-ended valve or line with a cap, blind flange, plug, or a second valve such that the open end is sealed at all times except during operations requiring process fluid flow through the valve or line. Second valves shall be operated such that the process fluid valve is closed before the second valve. **(40 CFR 61, Subpart V, § 61.242-6)**

V. TESTING/SAMPLING

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

1. The permittee shall comply with the test methods and procedures requirements set forth in § 61.245. Monitoring shall comply with Method 21 utilizing calibrated instrumentation, and employing the techniques described in § 61.245(b) and (c). **(40 CFR 61, Subpart V, § 61.245(a) through (c))**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall monitor each exhauster quarterly to detect leaks by Method 21. **(40 CFR 61, Subpart L, § 61.135(d))**
2. The permittee shall record and keep in a readily accessible location information pertaining to the design of the control equipment (including schematics, design specifications, and information regarding changes in the design specifications) installed to comply with § 61.132 through § 61.134. **(40 CFR Part 61, Subpart L, § 61.138(a))**
3. The permittee shall record and maintain the following information regarding the semi-annual monitoring of the gas blanketing system:
 - a. The date of the inspection and the name of the inspector.
 - b. A brief description of each visible defect.
 - c. The presence of any leaks including the date of attempted and actual repair and method of repair of the leak.
 - d. Brief description of system abnormalities found.**(40 CFR 61, Subpart L, § 61.138(b))**
4. The permittee shall maintain records including information regarding equipment leaks, equipment identification numbers for all equipment in benzene service, a list of difficult to monitor valves, and information regarding any exemptions. Such records shall be maintained in a readily accessible location and be readily available to AQD upon request. **(40 CFR 61, Subpart V, § 61.246(c) through (j))**
5. The permittee shall determine the Total Annual Benzene (TAB) quantity in accordance with 40 CFR 61, Subpart FF, § 61.355(a)(1), (a)(2), (a)(6), (b), and (c). **(40 CFR, 61, Subpart FF, § 61.355(a)(1),(a)(2), (a)(6), (b), and (c))**
6. The permittee shall comply with the recordkeeping requirements of § 61.356 and reporting requirements of § 61.357. The permittee shall repeat the determination of TAB quantity whenever there is a change in the process generating the waste that could cause the TAB to increase to 1 Mg/yr or more. **(40 CFR 61, Subpart FF, § 61.355(a)(5))**
7. The permittee shall maintain in a readily available location for a period not less than 2 years, records regarding benzene waste streams subject to Subpart FF that include the information required by § 61.356(b). **(40 CFR 61, Subpart FF, § 61.356(a) and (b))**

VII. REPORTING

1. The permittee shall submit semi-annual reports containing information regarding source leaks, control system abnormalities, and equipment leaks and other information as specified in § 61.138(f). The permittee shall submit the reports in January and July of each year. **(40 CFR 261, Subpart L, § 61.138(f) and (g))**
2. The permittee shall submit semi-annual reports containing information regarding source leaks, control system abnormalities, and equipment leaks and other information as specified in § 61.242, § 61.245, § 61.246, and § 61.247. The permittee shall submit the reports in January and July of each year. **(40 CFR 61, Subpart V, § 61.247(a) and (c))**
3. The permittee shall submit semi-annual reports containing information including the process unit identification, the number of leaks in pumps and valves for each month of the reporting period, an explanation of any delay of repairs, dates of process unit shutdowns, any changes that have occurred since the initial report, and the results of any performance tests or monitoring to determine compliance with no detectable emissions. The permittee shall submit the reports in January and July of each year. **(40 CFR 61, Subpart V, § 61.247(b))**

4. If the permittee elects to comply with the alternative standards for valves (§ 61.243-1 or 2), the permittee shall notify the AQD District Supervisor 90 days before implementing the alternative standard. **(40 CFR 61, Subpart V, § 61.247(d))**
5. The permittee will review the TAB each year and shall submit an updated TAB report whenever there is a change in the process generating the benzene waste stream that could cause the TAB to increase to 1 Mg/yr or more. **(40 CFR 61, Subpart FF, § 61.357(b))**

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

1. Each piece of equipment in benzene service which is subject to 40 CFR 61, Subpart L shall be marked in such a manner that it can be distinguished readily from other pieces of equipment in benzene service. **(40 CFR 61, Subpart L, § 61.135(c))**
2. Each piece of equipment subject to 40 CFR 61, Subpart V shall be marked in such a manner that it can be distinguished readily from other pieces of equipment. **(40 CFR 61, Subpart V, § 61.242-1(d))**
3. The permittee shall determine what equipment are in benzene service as each piece of equipment within the process unit is presumed to be in benzene service unless the permittee demonstrates that the piece of equipment is not in benzene service. **(40 CFR 61, Subpart V, § 61.245(d))**
4. When leak is detected at any pump, valve, pressure relief device in liquid service, flange and other connector, or exhauster, the permittee shall attach to the leaking equipment a weatherproof and readily visible identification tag with the equipment identification number. Any such identification tag on a valve shall not be removed until the valve has been monitored for 2 successive months and no leak has been detected. Any such identification tag can be removed from any other equipment after the leak has been repaired. **(40 CFR 61, Subpart V, § 61.246(b))**

The following conditions apply to: FGMACTL

DESCRIPTION: The provisions of Subpart L apply to existing by-product coke oven batteries at a coke plant.

Emission Units: EUCKE-BATTERY

POLLUTION CONTROL EQUIPMENT: Overpressure bleeder flares

I. EMISSION LIMITS

1. The permittee shall not allow to be discharged to the atmosphere coke oven emissions from the coke oven doors that exceed any of the following emission limitations:
 - a. 4.0 percent leaking coke oven doors, as determined by the procedures in § 63.309(d)(1). **(40 CFR 63.304(b)(4)(i))**
 - b. 0.4 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1). **(40 CFR 63.304(b)(4)(ii))**
 - c. 2.5 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1). **(40 CFR 63.304(b)(4)(iii))**
 - d. 12 seconds of visible emissions per charge, as determined by the procedures in § 63.309(d)(2). **(40 CFR 63.304(b)(4)(iv))**
2. The permittee shall have no visible emissions from bypass/bleeder flares, as determined by the methods specified in § 63.309(h)(1), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. **(40 CFR 63.307(c))**

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall implement the written emission control work practice plan which addresses all applicable plan components identified in § 63.306(b) as submitted to the EPA. **(40 CFR 63.306(c))**
2. The permittee shall temporarily seal any leak in the collecting main as soon as possible after detection, but no later than 4 hours after detection of leaks. **(40 CFR 63.308(c))**
3. The permittee shall operate the coke oven battery and the required pollution control equipment at all times including periods of startup, shutdown and malfunction, in a manner consistent with good air pollution control practices for minimizing emissions to levels required under CFR 63, Subpart L. **(40 CFR 63.310(a))**
4. The permittee of a coke oven battery shall implement and maintain a written startup, shutdown and malfunction plan that describes procedures for operating the battery in a manner consistent with good air pollution control practices for minimizing emissions and by correcting malfunctions as soon as practicable in accordance with the plan. **(40 CFR 63.310(b) and (c))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall operate and maintain a bypass/bleeder stack flare system complete with electronic igniters installed in accordance with the design requirements as specified in § 63.307(a)(1) and (b). **(40 CFR 63.307)**

V. TESTING/SAMPLING

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

1. A daily performance test shall be conducted each day, 7 days per week by certified Method 303 observer to determine compliance with each applicable visible emission limitation for coke oven doors, topside port lids, offtake systems, bypass/bleeder flares, and charging operations in this permit. Each performance test shall be conducted according to the procedures and requirements of reference Method 303 or 303A or Methods 9 and 22 where applicable. Each performance test is to be conducted by a certified observer. The certified observer shall conduct each performance test according to the requirements of 40 CFR 63, Subpart L. The procedures in § 63.309(d) shall be used to determine compliance with each applicable visible emission limitation for coke oven doors, topside port lids, offtake systems, bypass/bleeder flares, and charging operations in this permit. **(40 CFR 63.309)**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall inspect the collecting main for leaks at least once daily according to the procedures in Method 303 as specified in § 63.308(a). The permittee shall record the time and date a leak is first observed, the time and date the leak is temporarily sealed, and the time and date of repair. **(40 CFR 63.308)**
2. The permittee shall maintain a record of internal reports which form the basis of every malfunction notification under § 63.310(f). **(40 CFR 63.310(f))**
3. The permittee shall maintain files on-site at all time of all required information in a permanent form suitable for inspection at an on-site location for at least 1 year, and thereafter will maintain such files for 5 years from the date of creation at a location so that the files are accessible within 3 working days. Such records include a copy of the work practice plan, records related to the implementation of the work practice plan, design drawings and engineering specifications for the bypass/bleeder stack flare system, and records regarding the basis of each malfunction notification. **(40 CFR 63.311(f))**
4. The permittee shall maintain records required to be maintained and reports required to be filed under 40 CFR 63, Subpart L be made available to the authorized collective bargaining representative of the employees at the coke battery for inspection and copying in accordance with the provisions of § 63.311(g). **(40 CFR 63.311(g))**

VII. REPORTING

1. Within 14 days of the notification made under § 63.310(d), or after a startup, shutdown, or malfunction, the permittee shall submit a written report to the AQD District Supervisor that:
 - a. Describes the time and circumstances of the startup, shutdown, or malfunction; and
 - b. Describes actions taken that might be considered inconsistent with the startup, shutdown, or malfunction plan.**(40 CFR 63.310(e))**
2. The permittee shall submit semi-annual compliance certifications in accordance with § 63.311(d). **(40 CFR 63.311(d))**
3. The permittee shall report any venting of coke oven gas through a bypass/bleeder stack that was not vented through the bypass/bleeder stack flare system to the USEPA as soon as practicable but no later than 24 hours of the event. The permittee shall submit a follow-up written report within 30 days. **(40 CFR 63.311(e))**

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

1. The permittee shall make available to the surrounding communities the results of any risk assessment performed by the USEPA to determine the appropriate level of any emission standards under section 112(f) of the CAA, within reasonable time after any such risk assessment is published by the USEPA. **(40 CFR 63.304(d))**

The following conditions apply to: FGMACTCCCC

DESCRIPTION: The provisions of Subpart CCCCC apply to pushing, soaking, quenching, and battery stacks at coke oven batteries.

Emission Units: EUCKE-BATTERY

POLLUTION CONTROL EQUIPMENT: PECS baghouse, quench tower

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. PM	0.02 lb/ton of coke pushed	Test protocol shall specify averaging time.	PECS baghouse stack - EUCKE-BATTERY	SC V.1	40 CFR 63.7290(a)(2)

2. The permittee shall not discharge to the atmosphere any emissions from any battery stack at the coke oven battery that exhibit an opacity greater than the following emission limitations:
 - a. Daily average of 15 percent opacity for a battery on a normal coking cycle.
 - b. Daily average of 20 percent opacity for a battery on batterywide extended coking.
(40 CFR 63.7296)

II. MATERIAL LIMITS

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Total dissolved solids (TDS) content of quenching water	Less than 1,100 mg/liter	Test protocol shall specify averaging time.	Quench tower - EUCKE-BATTERY	SC V.3	40 CFR 63.7295(a)(1)(i)

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall comply with the work practice standards for fugitive pushing emissions as specified in § 63.7291(a). **(40 CFR 63.7291(a))**
2. The permittee shall operate at all times according to a written work practice plan for soaking. The plan must include measures and procedures to:
 - a. Train topside workers to identify soaking emissions that require corrective actions.
 - b. Damper the oven off the collecting main prior to opening the standpipe cap.
 - c. Determine the cause of soaking emissions that do not ignite automatically, including emissions that result from raw coke oven gas leaking from the collecting main through the damper, and emissions that result from incomplete coking.
 - d. If soaking emissions are caused by leaks from the collecting main, take corrective actions to eliminate the soaking emissions. Corrective actions may include, but are not limited to, reseating the damper, cleaning the flushing liquor piping, using aspiration, putting the oven back on the collecting main, or igniting the emissions.
 - e. If soaking emissions are not caused by leaks from the collecting main, notify a designated responsible party. The responsible party must determine whether the soaking emissions are due to incomplete coking. If incomplete coking is the cause of the soaking emissions, you must put the oven back on the collecting main until it is completely coked or you must ignite the emissions.

- f. As provided in § 63.6(g), you may request to use an alternative to the work practice standard.
(40 CFR 63.7294)
3. The permittee shall comply with the following requirements for each quench tower at a coke oven battery:
 - a. Equip each quench tower with baffles such that no more than 5 percent of the cross sectional area of the tower may be uncovered or open to the sky.
 - b. Wash the baffles in each quench tower once each day that the tower is used to quench coke, except as specified as follows:
 - i. The permittee is not required to wash the baffles in a quench tower if the highest measured ambient temperature remains less than 30°F throughout that day (24-hour period). If the measured ambient temperature rises to 30°F or more during the day, you must resume daily washing according to the schedule in your operation and maintenance plan.
 - ii. Continuously record the ambient temperature on days that the baffles were not washed.
 - c. Inspect each quench tower monthly for damaged or missing baffles and blockage.
 - d. Initiate repair or replacement of damaged or missing baffles within 30 days and complete as soon as practicable.
(40 CFR 63.7295(b))
4. The permittee shall comply with the general operation and maintenance requirements for the coke oven battery as specified in § 63.7300(b). **(40 CFR 63.7300(b))**
5. The permittee shall maintain and operate at all times according to a written operation and maintenance plan for each capture system and control device applied to pushing emissions from the coke oven battery as specified in § 63.7300(c). **(40 CFR 63.7300(c))**
6. The permittee shall implement and maintain a written start-up, shutdown, and malfunction plan as specified in § 63.7310(c). **(40 CFR 63.7310(c))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall install, operate, and maintain a bag leak detection system for each baghouse applied to pushing emissions according to the following requirements:
 - a. The system must be certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less;
 - b. The system must provide output of relative changes in particulate matter loadings;
 - c. The system must be equipped with an alarm that will sound when an increase in relative particulate loadings is detected over a preset level. The alarm must be located such that it can be heard by the appropriate plant personnel;
 - d. Each system that works based on the triboelectric effect must be installed, operated, and maintained in a manner consistent with the guidance document, "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015, September 1997). You may install, operate, and maintain other types of bag leak detection systems in a manner consistent with the manufacturer's written specifications and recommendations;
 - e. To make the initial adjustment of the system, establish the baseline output by adjusting the sensitivity (range) and the averaging period of the device. Then, establish the alarm set points and the alarm delay time;
 - f. Following the initial adjustment, do not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time, except as detailed in your operation and maintenance plan. Do not increase the sensitivity by more than 100 percent or decrease the sensitivity by more than 50 percent over a 365-day period unless a responsible official certifies, in writing, that the baghouse has been inspected and found to be in good operating condition;
 - g. Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.
(40 CFR 63.7331(a))

V. TESTING/SAMPLING

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

1. The permittee shall conduct performance tests for emissions of particulate matter from the PECS baghouse no less frequently than twice (at mid-term and renewal) during each term of an ROP. The permittee shall comply with test requirements and follow the methods and procedures as specified:
 - a. Determine the concentration of particulate matter according to the following test methods in appendix A to 40 CFR 60.
 - i. Method 1 to select sampling port locations and the number of traverse points. Sampling sites must be located at the outlet of the control device and prior to any releases to the atmosphere.
 - ii. Method 2, 2F, or 2G to determine the volumetric flow rate of the stack gas.
 - iii. Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.
 - iv. Method 4 to determine the moisture content of the stack gas.
 - v. Method 5 or 5D, as applicable, to determine the concentration of front half particulate matter in the stack gas.
 - b. During each particulate matter test run, sample only during periods of actual pushing when the capture system fan and control device are engaged. Collect a minimum sample volume of 30 dry standard cubic feet of gas during each test run. Three valid test runs are needed to comprise a performance test. Each run must start at the beginning of a push and finish at the end of a push (*i.e.*, sample for an integral number of pushes).
(40 CFR 63.7321, 40 CFR 63.7322, 40 CFR 7333(a))
2. The permittee shall determine compliance with the daily average opacity limit for stacks of 15 percent for a coke oven battery on a normal coking cycle or 20 percent for a coke oven battery on batterywide extended coking using the following test methods and procedures:
 - a. Using the continuous opacity monitoring system (COMS) required in § 63.7330(e), measure and record the opacity of emissions from each battery stack for a 24-hour period.
 - b. Reduce the monitoring data to hourly averages as specified in § 63.8(g)(2).
 - c. Compute and record the 24-hour (daily) average of the COMS data.
(40 CFR 63.7324)
3. The permittee shall sample the TDS content of the quench water using the test methods for coke oven quench towers as specified in § 63.7325. **(40 CFR 63.7325)**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall comply with the continuous compliance monitoring requirements for the PECS baghouse as specified:
 - a. For each baghouse applied to pushing emissions, the permittee must install, operate, and maintain each bag leak detection system according to the requirements:
 - i. The system must be certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less;
 - ii. The system must provide output of relative changes in particulate matter loadings;
 - iii. The system must be equipped with an alarm that will sound when an increase in relative particulate loadings is detected over a preset level. The alarm must be located such that it can be heard by the appropriate plant personnel;
 - iv. Ongoing operation and maintenance procedures in accordance with the general requirements of §§ 63.8(c)(1), (3), (4)(ii), (7), and (8);
 - v. Ongoing data quality assurance procedures in accordance with the general requirements of § 63.8(d);
 - vi. Ongoing recordkeeping and reporting procedures in accordance the general requirements of §§ 63.10(c), (e)(1), and (e)(2)(i).

- b. For each baghouse applied to pushing emissions, the permittee shall conduct inspections as follows:
 - i. Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual;
 - ii. Confirm that dust is being removed from hoppers through weekly visual inspections or equivalent means of ensuring the proper functioning of removal mechanisms;
 - iii. Check the compressed air supply for pulse-jet baghouses each day;
 - iv. Monitor cleaning cycles to ensure proper operation using an appropriate methodology;
 - v. Check bag cleaning mechanisms for proper functioning through monthly visual inspection or equivalent means;
 - vi. Make monthly visual checks of bag tension on reverse air baghouses to ensure that bags are not kinked (knead or bent) or laying on their sides.;
 - vi. Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks; and
 - vii. Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.

(40 CFR 63.7330, 40 CFR 63.7331)

2. The permittee shall monitor and collect data for combustion stack opacity, PECS baghouse leak detection, and the PECS (fan motor amps, RPM or static pressure) to demonstrate continuous compliance at all times the affected source is operating except for monitor malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments). The permittee must monitor continuously (or collect data at all required intervals) at all times the affected source is operating.

The permittee may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels, or in fulfilling a minimum data availability requirement, if applicable. The permittee must use all the data collected during all other periods in assessing compliance. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitor to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

(40 FR 63.7332)

3. The permittee shall demonstrate continuous compliance for each by-product coke oven battery subject to the opacity limit for stacks in § 63.7296(a) by meeting the following requirements:
 - a. Maintaining the daily average opacity at or below 15 percent for a battery on a normal coking cycle or 20 percent for a battery on battery wide extended coking;
 - b. Operating and maintaining a COMS and collecting and reducing the COMS data according to § 63.7331(j).

(40 CFR 63.7333(e))

4. The permittee shall demonstrate continuous compliance with the TDS limit for quenching in §63.7295(a)(1)(i) by meeting the following requirements:
 - a. Maintaining the TDS content of the water used to quench hot coke at 1,100 mg/L or less;
 - b. Determining the TDS content of the quench water at least weekly according to the requirements in § 63.7325(a) and recording the sample results.

(40 CFR 63.7333(f))

5. The permittee shall demonstrate continuous compliance with the work practice standards that apply to the affected source by meeting the following requirements:
 - a. For each by-product coke oven battery with vertical flues subject to the work practice standards for fugitive pushing emissions in § 63.7291(a):
 - i. Observe and record the opacity of fugitive emissions for four consecutive pushes per operating day, except you may make fewer or non-consecutive observations as permitted by § 63.7291(a)(3). Maintain records of the pushing schedule for each oven and records indicating the legitimate operational reason for any change in the pushing schedule according to § 63.7291(a)(4).

- ii. Observe and record the opacity of fugitive emissions from each oven in a battery at least once every 90 days. If an oven cannot be observed during a 90-day period, observe and record the opacity of the first push of that oven following the close of the 90-day period that can be read in accordance with the procedures in this SC.
 - iii. Make all observations and calculations for opacity observations of fugitive pushing emissions in accordance with Method 9 in appendix A to 40 CFR 60 using a Method 9 certified observer unless you have an approved alternative procedure.
 - iv. Record pushing opacity observations at 15-second intervals as required in section 2.4 of Method 9 (appendix A to 40 CFR 60). The requirement in Section 2.4 of Method 9 for a minimum of 24 observations does not apply, and the data reduction requirements in section 2.5 of Method 9 do not apply. The requirement in § 63.6(h)(5)(ii)(B) for obtaining at least 3 hours of observations (thirty 6-minute averages) to demonstrate initial compliance does not apply.
 - v. If fewer than six but at least four 15-second observations can be made, use the average of the total number of observations to calculate average opacity for the push. Missing one or more observations during the push (e.g., as the quench car passes behind a building) does not invalidate the observations before or after the interference for that push. However, a minimum of four 15-second readings must be made for a valid observation.
 - vi. Begin observations for a push at the first detectable movement of the coke mass. End observations of a push when the quench car enters the quench tower.
 1. For a battery without a cokeside shed, observe fugitive pushing emissions from a position at least 10 meters from the quench car that provides an unobstructed view and avoids interferences from the topside of the battery. This may require the observer to be positioned at an angle to the quench car rather than perpendicular to it. Typical interferences to avoid include emissions from open standpipes and charging. Observe the opacity of emissions above the battery top with the sky as the background where possible. Record the oven number of any push not observed because of obstructions or interferences.
 2. Reposition after the push to observe emissions during travel if necessary.
 - vii. For each oven observed that exceeds an opacity of 35 percent for any tall battery, take corrective action and/or increase the coking time in accordance with § 63.7291(a). Maintain records documenting conformance with the requirements in § 63.7291(a).
 - b. For each by-product coke oven battery subject to the work practice standard for soaking in §63.7294(a), maintain records that document conformance with requirements in § 63.7294(a)(1) through (5).
 - c. For each coke oven battery subject to the work practice standard for quenching in § 63.7295(b):
 - i. Maintain baffles in each quench tower such that no more than 5 percent of the cross-sectional area of the tower is uncovered or open to the sky as required in § 63.7295(b)(1);
 - ii. Maintain records that document conformance with the washing, inspection, and repair requirements in § 63.7295(b)(2), including records of the ambient temperature on any day that the baffles were not washed;
 - iii. Maintain records of the source of makeup water to document conformance with the requirement for acceptable makeup water in § 63.7295(a)(2).
- (40 CFR 63.7334(a), (d) and (e))**
6. The permittee shall demonstrate continuous compliance with the operation and maintenance requirements that apply to the affected source as specified:
 - a. For each by-product coke oven battery, the permittee must demonstrate continuous compliance with the operation and maintenance requirements in § 63.7300(b) by adhering at all times to the plan requirements and recording all information needed to document conformance.
 - b. For each coke oven battery with a capture system or control device applied to pushing emissions, you must demonstrate continuous compliance with the operation and maintenance requirements in §63.7300(c) by meeting the requirements of paragraphs (b)(1) through (3) of this section:
 - i. Making monthly inspections of capture systems according to § 63.7300(c)(1) and recording all information needed to document conformance with these requirements;
 - ii. Performing preventative maintenance for each control device according to § 63.7300(c)(2) and recording all information needed to document conformance with these requirements; and

- iii. Initiating and completing corrective action for a bag leak detection system alarm according to § 63.7300(c)(3) and recording all information needed to document conformance with these requirements. This includes records of the times the bag leak detection system alarm sounds, and for each valid alarm, the time corrective action is initiated, the corrective action(s) taken, and the date on which corrective action is completed.
- c. To demonstrate continuous compliance with the operation and maintenance requirements for a baghouse applied to pushing emissions from a coke oven battery in § 63.7331(a), the permittee must inspect and maintain each baghouse according to the requirements in § 63.7331(a)(1) through (8) and record all information needed to document conformance with these requirements. If increase or decrease the sensitivity of the bag leak detection system beyond the limits specified in §63.7331(a)(6), include a copy of the required written certification by a responsible official in the next semiannual compliance report.
- d. You must maintain a current copy of the operation and maintenance plans required in § 63.7300(b) and (c) onsite and available for inspection upon request. The permittee keep the plans for the life of the affected source or until the affected source is no longer subject.

(40 CFR 63.7335)

7. The permittee must keep the records for the affected source as specified:
 - a. A copy of each notification and report submitted to comply with this subpart, including all documentation supporting any initial notification or notification of compliance status submitted, according to the requirements in § 63.10(b)(2)(xiv).
 - b. The records in § 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.
 - c. Records of performance tests, performance evaluations, and opacity observations as required in § 63.10(b)(2)(viii).
 - d. For each COMS or CEMS, keep the following records as specified:
 - i. Records described in § 63.10(b)(2)(vi) through (xi).
 - ii. Monitoring data for COMS during a performance evaluation as required in § 63.6(h)(7)(i) and (ii).
 - iii. Previous (that is, superseded) versions of the performance evaluation plan as required in § 63.8(d)(3).
 - iv. Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.
 - e. The permittee must keep the records in § 63.6(h)(6) for visual observations.
 - f. The permittee must keep the records required in §§ 63.7333 through 63.7335 to show continuous compliance with each emission limitation, work practice standard, and operation and maintenance requirement that applies.

(40 CFR 63.7342)

VII. REPORTING

1. The permittee shall report each deviation from continuous compliance with emission limitation (including operating limits), work practice standards, and the operation and maintenance requirements that apply to the affected source as specified in § 63.7336. These deviations shall be reported according to the requirements in § 63.7341. **(40 CFR 63.7341)**
2. The permittee must submit all of the notifications that apply to the source as specified in § 63.7336(a) to (e) and § 63.7340(a) to (e). **(40 CFR 63.7334, 40 CFR 63.7340)**

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

1. The permittee shall comply with the general compliance requirements as specified in § 63.7310(a). **(40 CFR 63.7310(a))**

APPENDIX A
Particulate Matter Testing Methods for the
Underfire Combustion Stack on EUCKE-BATTERY

Limit	Method*	Duration / Sample Volume
PM (lb/1000 lb at 50% excess air)	State of MI 5C/EPA Method 5	60 minutes/30 dscf
PM (gr/dscf excluding sulfates)	EPA Method 5 corrected for sulfate – 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.	60 minutes/30 dscf
PM (pph excluding sulfates)	EPA Method 5 corrected for sulfate – 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.	60 minutes/30 dscf
PM10 (pph)	EPA Method 201A + 202	120 minutes/60 dscf
PM2.5 (pph)	EPA Method 201A + 202	120 minutes/60 dscf

* Any changes to testing methods must be approved by the AQD District Supervisor.

APPENDIX B
Continuous Opacity Monitoring System (COMS) Requirements

1. The permittee shall implement and maintain an approved Monitoring Plan. The Monitoring Plan shall include drawings or specifications showing proposed locations and descriptions of the required COMS.
2. Within 60 days of completion of testing, the permittee shall submit to the AQD two copies of the final report demonstrating the COMS complies with the requirements of Performance Specification (PS) 1.
3. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.
4. The COMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13, and PS 1 of Appendix B, 40 CFR 60.
5. The permittee shall perform an annual audit of the COMS using the procedures set forth in the USEPA Publication 450/4-92-010, "Performance Audits Procedures for Opacity Monitors", or a procedure acceptable to AQD. Within 30 days after the completion of the audit, the results of the annual audit shall be submitted to the AQD.
6. 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 Air Quality Division, 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. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.
 - b. A report of all periods of COMS downtime and corrective action.
 - c. A report of the total operating time during the reporting period.
 - d. If no exceedances or COMS downtime occurred during the reporting period, the permittee shall report that fact.

All monitoring data is shall be kept on file for a period of at least five years and made available to the AQD upon request.

APPENDIX C
NO_x, SO₂, CO, CO₂/O₂
Continuous Emission Monitoring System and Continuous Emission Rate Monitoring System
(CEMS/CERMS) Requirements

1. Within 30 calendar days after permit issuance, the permittee shall submit two copies of a Fuel Flow Monitoring Plan to the AQD for review and approval. The Fuel Flow Monitoring Plan shall include fuel flow metering methodology and data to support a default COG heating value (Btu/scf).
2. The permittee shall implement and maintain an approved Monitoring Plan. The Monitoring Plan shall include drawings or specifications showing proposed locations and descriptions of the required CEMS/CERMS.
3. 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 /SO ₂	2
CO	4
CO ₂ /O ₂	3
CERMS	6

4. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.
5. 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. 2 above) of Appendix B to 40 CFR 60.
6. Each calendar quarter, the permittee shall perform the Quality Assurance Procedures of the CEMS/CERMS set forth in Appendix F of 40 CFR 60. 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 60).
7. 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 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.
8. 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.

APPENDIX J MODELING OF DTE MONROE POWER PLANT

The DTE Monroe power plant is located approximately 50 km south of the SWHS monitor and is outside the nonattainment area. However, DTE Monroe has historically been the largest single source of SO₂ emissions in the state and it was believed that the DTE Monroe emissions could have a significant impact on the nonattainment area. As such, it was included in the SIP modeling analysis. The various emission levels at the power plant have been compared to monitor values at SWHS, and modeling of different emission levels has also been conducted. It remains unclear how much DTE Monroe power plant has impacted the monitor. The following provides more detail on the analysis that has been completed.

Over the past few years, Monroe has gone through a series of emissions reductions, via SO₂ scrubber control, which were completed in June 2014. The schedule of control installation by unit follows:

Unit 1 - 12/19/13
Unit 2 - 6/9/14

Unit 3 - 11/16/09
Unit 4 - 6/2/09

From the period of 2008 to 2013, facility actual emissions dropped from 118,384 tons/year in 2008 to 43,765 tons/year. With the addition of controls on Units 1 and 2, those emissions dropped to approximately 2,245 tons/year in 2015. Although the DTE Monroe power plant is 30 miles away, the large reductions of annual SO₂ emissions from the plant may be a contributor to the observed decrease in SO₂ levels at the SWHS monitor over the recent years. As seen in Table 1, in the last six years SO₂ at the SWHS monitor has decreased, though not every year. However, the reductions at the monitor do not clearly follow the large reductions in SO₂ occurring at the power plant in 2009 and 2014 and therefore cannot serve as a permanent and enforceable explanation for the monitor trends adequate to meet federal requirements.

To evaluate the power plant impacts at the SWHS monitor, the 2013 actual emissions were modeled, reflecting controlled emissions at Units 3 and 4 and uncontrolled emissions at Units 1 and 2. The emissions scenario was then revised to assume Units 1 and 2 are also controlled to the same levels as Units 3 and 4 which, since June 2014, is actually the case. The model results predict a decrease of the DTE Monroe contribution to the SWHS monitor from 24.4 ppb in 2013 to 1.2 ppb in 2015 with actual emission operating levels and all units now controlled.

One consideration regarding modeling of DTE Monroe emission impacts at SWHS is that the AERMOD model is designed to be used for predicting impacts from sources up to 50 kilometers (30 miles) away. This is the distance from the DTE Monroe power plant to SWHS, which increases the possibility of less accuracy in the modeling results than would be expected when the model is used within the distances for which it was designed.

APPENDIX K
Public Comments on the Proposed SO₂ SIP

Includes comments received on the proposed SIP at the Trenton Channel and Marathon public hearings, provided as an addendum to this section.

NONATTAINMENT AREA DESIGNATION

Comment

U.S. Steel commented that the sub-county designation boundary proposed by the MDEQ erroneously omitted the nearby area that contains the largest coal-fired power plant in Southeast Michigan contributing significant amounts of SO₂ to the designation area. When the USEPA approved the sub-county boundary, they reserved for later a decision about the nearby areas contributing to the nonattaining area, including the area that contains the DTE Monroe coal-fired power plant. Subsequently, U.S. Steel filed a petition for reconsideration with the USEPA. While that petition was denied, the statement of basis for that denial noted that “the impacts of sources outside as well as inside the nonattainment area must be accounted for.” Therefore, Michigan's plan must account for all impacts from all sources that influence concentrations in the nonattainment area, including the impacts from sources that have not been identified as nearby contributors to the violations.

The MDEQ must look first to evaluating the impact of these existing reductions at the SWHS monitor and determine if further reductions are necessary to bring the area into attainment with the NAAQS. Since these reductions have resulted in the SO₂ monitor measuring attainment in the area of highest expected concentration, no further emission reductions within the sub-county designated area are necessary to achieve attainment.

Response

The MDEQ proposed the current nonattainment boundaries based on a variety of data, and the USEPA accepted the proposal. Emission impacts from the DTE Monroe facility were modeled as part of the SIP development process, as more fully described in the Modeling section of this document.

LARGE SO₂-EMITTING FACILITIES

Comment

EES Coke commented that the SO₂ control strategy/SIP demonstration must focus on reducing SO₂ ambient concentrations, not tons/year reductions.

Response

The MDEQ agrees. The SIP control strategy demonstrates reduced SO₂ ambient concentrations.

Comment

EES Coke stated that a comment was made suggesting that the proposed strategy would increase SO₂ and NO_x emissions. This comment does not consider plans to use COG to replace coal firing.

Response

The MDEQ recognizes that different control strategies will result in differences in emissions and SO₂ impacts. These need to be accounted for with any strategy that is chosen. For instance, increases in NO_x may occur if additional natural gas is combusted and would be evaluated in a permit application review of a process modification.

Comment

EES Coke stated that COG desulfurization is not needed due to the small SO₂ impact from EES Coke sources.

Response

Information the MDEQ reviewed identifies that COG desulfurization remains a viable and potentially cost-effective method of reducing SO₂.

MODELING

Comment

DTE commented that the SEMAQS Group (MDEQ, SEMCOG, industry, others) helped resolve several complex SIP issues: (1) maximum impacts occur at SWHS with south winds; (2) sources to the SW and WSW do not cause maximum impacts at SWHS monitor; (3) the MDEQ's background estimate approach is appropriate (but may have double counted the DTE Monroe impact); and (4) the MDEQ's justification of use of rural and urban dispersion for certain types of sources was appropriate. The SIP needs to address: (1) tall stack dispersion of emissions released to stable layers; and (2) the effects of the Detroit River and Lake Erie on stability when winds are from the south. The SWHS monitor is close enough to the combined hotspot to provide real-world SO₂ impact estimates.

Response

The tall stack dispersion of emissions released to stable layers was adequately resolved in the urban/rural issue and validated in the 2013 actual emissions/SWHS monitor model performance analysis. While micro-meteorology does play a factor in overall plume dispersion, the effects of the Detroit River and Lake Erie on localized stability cannot be definitively determined. However, the model validation run with the 2013 actual emissions and monitor impacts showed a high statistical correlation between the model performance and monitor.

Comments

DTE made the following comments:

1. The SWHS monitor is properly located to monitor maximum combined concentrations of SO₂.

Response

The SWHS monitor is not located in a manner as to be representative of all of the areas of high 1-hour SO₂ impacts in the nonattainment area. Because of the multiple large sources in relatively close proximity, a single monitor could not accomplish this. The MDEQ modeling of actual SO₂ emissions reveal two areas that exceed the NAAQS, both of which are more than one mile from the SWHS monitor and have very localized dispersion characteristics.

2. The ambient impact of multiple sources is accurately measured by monitoring; it is far more challenging for modeling to accurately predict this impact.

Response

As stated above, the SWHS monitor is not located in a manner as to be representative of all of the areas of high 1-hour SO₂ impacts in the nonattainment area. Because of the multiple large sources in relatively close proximity, a single monitor could not accomplish this. The MDEQ modeling of actual SO₂ emissions reveal two areas that exceed the NAAQS, both of which are more than one mile from the SWHS monitor and have very localized dispersion characteristics.

3. It is inappropriate to rely on AERMOD to accurately predict the location or concentration of multiple source hotspots in a complex source area such as the Detroit nonattainment area.

Response

There is no other reasonable methodology besides modeling to address multiple source emissions in a complex area. The AERMOD model is designed for characterizing multiple source impacts and is routinely used for regulatory impact analyses.

4. The MDEQ calibrated the model to the SWHS location - calibration may provide more accurate predictions at SWHS, but over-predictions at other receptors.

Response

Actual monitor concentrations compared to modeled predictions at the same location with actual emission inputs is the best way to validate model performance. Using USEPA calibration guidance, the AERMOD model produced design values nearly identical to the monitor design value. As the model did not show any violations at other area monitors showing compliance, there is no compelling evidence to suggest that the model is over-predicting in other areas.

5. The MDEQ calibration adds greater uncertainty to prediction of the hotspot locations.

Response

Showing nearly perfect design value correlation between the model and the violation monitor is more likely to generate confidence in the model performance rather than uncertainty.

6. There is no basis in the record for concluding that model accurately predicts concentrations at any specific location.

Response

The SWHS monitor is at a specific, physical location. The AERMOD model produced a result that is nearly statistically identical to the monitor design value at that location. This analysis was documented and submitted in the SIP documentation.

Comment

A commenter stated that emission averaging in the MDEQ modeling is a problem.

Response

Permit conditions have historically been based on a short-term average (i.e., 24-hour average). The MDEQ requested that DTE compare actual averaged emissions to maximum hourly data using CEM data. DTE's analysis determined that adding 15% to the permitted emission rate was a good approximation of maximum hourly emission rates. Thus, a 15% increase was applied to the DTE River Rouge and Trenton Channel modeled emissions.

Comment

A commenter stated that the urban/rural method the MDEQ used in modeling is not acceptable.

Response

The original modeling analysis demonstrated an extremely large discrepancy between impacts from tall, buoyant stacks in the model and actual monitored impacts using urban coefficients. This discrepancy was discussed with the USEPA and suggestions were made to determine which stacks were affected and how to correct the problem. The MDEQ reviewed each tall stack in the model, using the USEPA's suggestions, and determined which stacks would perform more accurately using rural coefficients. This analysis was documented and submitted to the USEPA. As a result, the modified AERMOD model run impacts demonstrated nearly perfect alignment between

actual emissions and monitor impact using the modified urban/rural coefficients. In response to this analysis, the USEPA applied a fix to the AERMOD model in their latest version update.

Comment

A commenter stated that more complete analysis of the mixed rural/urban approach is needed and should include scatter plots and statistical comparisons of modeling and monitoring results.

Response

The MDEQ engaged in several discussions with USEPA to determine documentation for the mixed urban/rural approach. Ultimately, the MDEQ used the graphical examples of linear impacts over distance, as demonstrated in the USEPA guidance, plus the USEPA's recommendation for determining the diurnal/nocturnal pattern of excessively high impacts which would occur under improper trapping. This methodology was documented, provided to, and accepted by the USEPA. The revised model, using 2013 actual emissions, was compared with 2013 monitored results, which demonstrated high accuracy. Since only a single value is used for the design value (98th percentile of daily maximums), scatter plots and other statistical analyses requiring large data fields would have no value.

Comment

A commenter stated that the MDEQ must follow modeling as required by the USEPA, and not say it is too conservative.

Response

The MDEQ followed the SIP modeling requirements per the USEPA. This requires the use of maximum allowable emission rates, emitted concurrently from all facilities. By definition, this will produce higher (i.e., more conservative) impacts than would occur in reality.

Comment

A commenter stated that modeling and monitoring results can get worse in the future if meteorology changes.

Response

The modeling analysis used five years of recent, representative hourly meteorology data from Detroit Metro Airport. This large data set provides high confidence that all conceivable meteorological conditions were covered in the analysis. Experience shows that while each new year of meteorology data will naturally not be exactly identical to any previous year, the changes from year to year are not significant.

Comment

A commenter stated that the MDEQ should not impose emission reductions without evaluating the impact of controls added at the DTE Monroe plant. Large reductions at DTE Monroe already in place assure the nonattainment area will stay in attainment without further reductions. The proposed SIP does not separately evaluate DTE Monroe reductions.

Response

All base case and future case analyses did assume that all units at the DTE Monroe power plant are controlled by scrubbers, as mandated by current permit and installed on or before June 2014. Actual emissions (2013), with two of four units controlled at DTE Monroe, were also modeled to validate model performance at the SWHS monitor. The base case/future case impacts, using controlled, allowable DTE Monroe emissions, showed a reduction of approximately 18 ppb from the use of 2013 actual emissions.

Comment

A commenter stated that the MDEQ modeled only the reductions at U.S. Steel from furnaces and boilers. The MDEQ did not model the increased flaring emissions at EES Coke. The MDEQ should model flaring of 100% of COG generated at EES Coke since there is no guarantee EES Coke will have customers for COG.

Response

The MDEQ modeled the allowable emissions from the EES Coke sources. The EES Coke emissions are emitted from stacks that encourage good dispersion and the predicted impacts did not yield an individual hotspot impact above the standard. For a worst-case scenario, the flare emission factors EES Coke provided to the MDEQ assumed that the flare received the maximum allowable COG while still assuming the combustion stack operated at allowable emission rates.

Comment

U.S. Steel stated that the MDEQ has not provided adequate basis for the 15 ppb background level. The MDEQ should not use background to add yet another layer of conservatism to a model that already over-predicts ambient concentrations. Instead, background should be set based on concentrations at an upwind monitor with a high probability of occurring at the time the modeled 4th highest 1-hour daily maximum value occurs. The MDEQ can justify a background concentration of 5 ppb or less on the available data. Imposing a higher background concentration unnecessarily increases the stringency of the SIP obligations disproportionately imposed on U.S. Steel.

Response

With the restrictive nature of the 1-hour standard, the MDEQ and USEPA are aware of the potential to “double count” sources being explicitly modeled within the monitored background concentration. As such, the USEPA has developed guidelines for screening out the contributions from sources being explicitly modeled. Such guidelines included screening out monitored concentrations when the wind is blowing from the direction of the sources being explicitly modeled. By doing so, the monitored concentration at the upwind monitor (Allen Park) yielded a 15 ppb regional background. The MDEQ and USEPA have determined that this is a very reasonable background concentration. Similar studies with other southeast Michigan monitors have indicated a similar regional background concentration for that area. As a result of this comment, the MDEQ has since reevaluated the background using more recent meteorological data and assumptions. The final analysis assumes an SO₂ background level of 12 ppb, as discussed in the Modeling Details section.

Comment

A commenter stated that the MDEQ overstates the requirement for modeling to show attainment. As the MDEQ has noted, “[i]t is very unlikely all the facilities considered will operate at their maximum capacity at the same time.” Relying on modeling of allowable/potential emissions results in an overly conservative estimate that does not reflect actual ambient air concentrations or accurately predict future ambient air concentrations. While AERMOD is the preferred model for single source modeling to address the 1-hour SO₂ NAAQS, AERMOD is less reliable as a guide for modeling combined or overlapping emission sources, which is what occurs in the Detroit nonattainment area.

Response

AERMOD is designed as a full, multi-source dispersion model. While many large SO₂ sources reviewed for NAAQS compliance tend to be stand-alone facilities, the downriver Detroit area is unique with multiple large SO₂ emitters in close proximity. While overlapping sources will create

certain difficulties in SIP planning, it does not raise any questions concerning the credibility of the USEPA's preferred model, AERMOD.

Comment

A commenter stated that modeling is a useful tool, but has inaccuracies, such as tending to over-predict impacts. Other USEPA Region 5 states recognized this issue in their SO₂ SIPs (Indiana and Ohio); Indiana and the MDEQ both focused SIP strategies on resolving single-source hotspots (not multi-source hotspots).

Response

The validation modeling, using actual emissions and impacts at the monitor location, showed the model's statistical performance was good. The over-prediction is a function of assuming that all sources concurrently emit their allowable emissions, which is unlikely in reality. The MDEQ has pursued additional control strategies beyond individual hotspots to reduce the overlapping impacts when the wind directions align the emission sources.

Comment

Several commenters stated that no modeling run in the proposed SIP comes close to demonstrating attainment. The highest cumulative hotspot (98.1 ppb) is more than 30% over the NAAQS and the cumulative impact at the SWHS monitor (87.6 ppb) is also well over the standard. The USEPA SIP guidance specifies that modeling must "show that the mix of sources and enforceable emissions rates in an identified area will not lead to a violation of the SO₂ NAAQS."

Response

In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in reduced emissions and revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

A commenter stated that emission rates fluctuate. Modeled emission rates were held constant. Some limits used multi-hour running averages. SIP limits should be 1-hour limits or statistical upper confidence interval type limits.

Response

The MDEQ followed USEPA guidance for SIP modeling, requiring maximum allowable emissions for every hour.

Comment

A commenter stated that modeling results should show culpable sources at hotspots.

Response

The AERMOD model does provide results for culpability breakdowns. That information was used to help the MDEQ and the companies determine the most effective control strategies.

Comment

A commenter stated that fence line receptors should have been included (or justify not using).

Response

This issue was discussed with the USEPA and covered within the SIP documentation. The entire SIP area was covered with 27,455 receptors uniformly spaced with a 100 meter grid. The MDEQ believes that the 100 meter uniform spacing, throughout the grid, is sufficiently dense to identify all areas of violating impacts. The addition of more receptors would not have added any more value to the analysis.

Comment

A commenter stated that further analysis is needed for:

- Use of urban dispersion parameters
- Table 8 stack parameters differ from MDEQ databases
- Maximum hourly rates not used
- No mention of Canadian sources
- Further analysis for hotspots
- Isopleth plots (more detailed)
- Expanded model domain.

Response

The selection of urban/rural coefficients has been discussed previously and is also documented in the SIP document.

Table 8 stack parameters were used within the modeling analysis and were provided by the companies.

Maximum allowable emission rates were used, as mandated by the USEPA guidance. In some cases, an additional 15% was added to the allowable permitted emission rate to estimate maximum hourly emissions.

The subject of international sources was discussed with the USEPA. The USEPA responded that international sources did not need to be included because there is no authority to control those sources. Validation modeling using actual emissions and monitor results did not suffer due to the exclusion of international sources.

The isopleths generated by the various model runs are adequate to determine the magnitude and location of the violating impacts.

The model domain already covers a large portion of Wayne County downriver of Detroit. Existing modeling results do not indicate that the domain would need to be expanded.

REASONABLY ACHIEVABLE CONTROL TECHNOLOGY (RACT) ANALYSIS

Comment

A commenter stated that the MDEQ failed to conduct a RACT analysis and to require RACT controls for the regulated sources.

Response

The MDEQ reviewed the RACT documents provided by the subject sources and used the information when working with the sources to develop control strategies. For SO₂ control, the USEPA has made it clear that the term RACT means whatever control is necessary to attain the

standard. In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

EES Coke stated that COG desulfurization is beyond RACT.

Response

COG desulfurization may or may not qualify as RACT, but remains a viable and potentially cost-effective SO₂ reduction strategy when compared to other more expensive means of achieving the NAAQS.

Comment

U.S. Steel stated that, as discussed in U.S. Steel's RACT analysis, not all of the suggested options are economically feasible and in some cases, not technologically feasible as well. It is not appropriate to list 'control methods' that have already been determined to not be feasible.

Response

The MDEQ is not convinced that any of the listed control options are technologically infeasible and has therefore listed them in new subrule (4) of the proposed rule. The MDEQ did not perform a separate engineering analysis of the information in the RACT document referenced above that may have shed more light on the claims in the RACT document of technological infeasibility.

Comment

U.S. Steel greatly objected to the MDEQ's statement that "the suggested RACT approach does not result in any emission reductions or improvement in impacts from the U.S. Steel affected sources." This comment indicates a failure by the MDEQ to understand the control strategy proposed by U.S. Steel and is inconsistent with the MDEQ's own statement on page 35 of the proposed SIP that U.S. Steel's proposed controls would result in emission reductions and reduced impacts at the SWHS monitor and elsewhere (Proposed Rule at 35, Table 13). U.S. Steel therefore requests that the statement be removed from the SIP.

The fuel blending option proposed by U.S. Steel would achieve a lower fuel sulfur level than fuels currently used and would thereby result in emission reductions per unit of heat input. As the analysis was intended to represent potential emissions, U.S. Steel used a heat input rate that was 25% higher than actual heat input to account for operational variability. Nonetheless, the fuel blending option reduces potential SO₂ emissions by 461.5 lbs/hour from the reheat furnaces alone and reflects a 31.5 lb/hour reduction from 2012 actual emissions. The proposed fuel blending option is the only source proposal in the proposed SIP that offered actual emission reductions from the 2012 actual emission rates. If there has been confusion or misunderstanding regarding this option, the MDEQ could have approached U.S. Steel at any time to discuss concerns.

U.S. Steel remained willing to discuss the details of its RACT analysis with the MDEQ.

Response

The MDEQ does not agree with U.S. Steel's portrayal of the company's proposed RACT strategy. Page 2 of the RACT document states that the proposed RACT emission rate is on an annual basis, reflecting a 25% increase from the 2013 value to account for variability, and that a shorter-term

averaging time would necessitate “a considerably higher emission rate to account for fuel blending fluctuations.” There is no indication that this inflated emission rate will result in emission reductions or impact reductions.

However, as stated by U.S. Steel, the MDEQ states on page 35 of the SIP document that the company proposed an SO₂ reduction plan reducing allowable SO₂ emissions by 53% from the strip mill. This proposal was made several months after the company submitted the RACT document. This proposal was not accepted by the MDEQ because modeling showed that a significant hotspot caused by these emissions remained, twice as high as the SO₂ NAAQS. If this proposal was the fuel blending option described in this comment, it was not tied to the later proposal when presented to the MDEQ.

Comment

U.S. Steel stated that that MDEQ is not acting consistently in the proposed rule and the proposed SIP. While the MDEQ maintains there are control options available to U.S. Steel besides fuel switching, this is precisely the control strategy on which the MDEQ relies in support of the proposed SIP. While the MDEQ distinguishes between total fuel switching and fuel blending, this does not eliminate the technical and cost concerns U.S. Steel has raised with retrofitting equipment to handle the increased use of natural gas or the installation of an additional flare to burn the displaced BFG from the proposed control strategy. These are significant obstacles to the proposed SIP that justify the consideration of alternatives. Where alternatives are available, the MDEQ is obligated to consider them and choose between effective options based on cost and an equitable distribution of burdens. Administrative Procedures Act MCL § 24.245(3)(g).

The MDEQ's decision to impose beyond RACT restrictions on U.S. Steel is deeply troubling. The MDEQ has declined to impose RACT on numerous sources within the Detroit designation area on the arbitrary basis that they fell below a modeled single-source impact of 60 ppb regardless of their impact on combined emissions in the designated area. The sole exception to this is EES Coke, which can feasibly install desulfurization, but this was rejected because it “costs too much to control” without an appropriate comparative analysis of feasible options under the Administrative Procedures Act.

Response

As stated numerous times in response to the claim by U.S. Steel that the MDEQ is mandating the use of fuel switch, the rule only mandates emission limits, and subrule (4) was added to proposed Rule 430 to clarify this.

To address the commenter's statements suggesting that the MDEQ should have considered alternatives to the provisions of the proposed Rule 430, a bit of history is needed. For several years, the MDEQ has worked with U.S. Steel in an effort to find a control strategy that achieves significant emission reductions and impacts. While U.S. Steel proposed an alternative to the provisions in the rule, the emission reductions associated with their alternative were not sufficient to ensure SO₂ concentrations in southwest Detroit would meet the NAAQS. An earlier version of proposed Rule 430 that addressed all SIP strategy facilities was developed as a backstop measure to ensure that the SIP goal was achieved in the event the MDEQ could not come to an acceptable agreement with the affected companies on an alternate strategy that would be the most cost-effective while still achieving significant reductions in SO₂ emissions and impacts. As a result of failure to obtain an acceptable alternative reduction strategy from U.S. Steel, proposed Rule 430 has proceeded along the promulgation path, at this point containing only the provisions for U.S. Steel.

Regarding reference to the Administrative Procedures Act, MCL § 24.245(3)(g)(3) lists the requirements to be addressed in the Regulatory Impact Statement (RIS) when promulgating rules. (g) states, "An identification of any reasonable alternatives to regulation pursuant to the proposed rule that would achieve the same or similar goals." The MDEQ interprets this to mean that other methods than regulation should be considered, as opposed to looking at different types of control strategies as the commenter suggests. The RIS for the proposed rule addressed this, as required.

As stated by U.S. Steel in the second paragraph, the other subject facilities are subject to reductions in potential emissions and impacts such that their own hotspots are eliminated. The level of control required of U.S. Steel in the proposed rule brings the facility to the same place of eliminating their hotspots.

Comment

U.S. Steel states that there is general control technology available, as identified in their RACT analysis. However, that does not explain the derivation of the MDEQ's proposed limits and how they are technically feasible for these existing units. Picking emission limits to make the model "work" without consideration for whether the equipment can actually achieve the limits using RACT is not appropriate.

Response

The MDEQ reiterates that the emission limits applicable to U.S. Steel can potentially be achieved by a variety of control strategies.

Comment

U.S. Steel stated that the USEPA regulations do not mandate the imposition of standards that are not technically or economically feasible. The Michigan Administrative Procedures Act is a further bar to such regulations. The MDEQ should acknowledge the technical and economic limitations of its proposed control plan in the SIP and limit its control plan to technically feasible and affordable options.

Response

For SO₂ control in a nonattainment area, the USEPA points to language in the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990 which states, "The definition for RACT for SO₂ is that control technology which is necessary to achieve the NAAQS (40 CFR Part 51.100 (o))." Thus there is no cost limit for achieving attainment of the SO₂ NAAQS in a nonattainment area. Furthermore, the Michigan Administrative Procedures Act does not bar a regulation based on the cost to implement.

Comment

Sierra Club stated that MDEQ has not independently evaluated RACT for the DTE River Rouge and Trenton Channel plants and has accepted DTE's unreasonable claim that RACT requires no pollution control for either the DTE River Rouge or Trenton Channel plants.

Response

The MDEQ agreed following the public hearing in March on the DTE permits that additional SO₂ reductions were needed to address RACT. The emission limits in the permits for the two power plants were revised in July 2015 to address this. The MDEQ takes the approach that minimally, RACT is the collateral reduction of SO₂ from the dry sorbent injection controls that both DTE facilities are installing to demonstrate compliance with the requirements of the federal mercury and air toxics rule. The costs are minimal and the dollar per ton value is within RACT. This additional reduction in SO₂ is reflected in the revised permit limits.

In addition, in response to comments on the proposed SIP, the MDEQ evaluated additional control strategies. Reduced allowable emissions from the DTE power plants were included in revised permits, as well as a stack height increase for Carmeuse Lime.

FINAL COMPANY COMPLIANCE PLANS

Comment

DTE stated that their new River Rouge and Trenton Channel emission limits are based on increasing the low sulfur western coal blend ratio and a 30-day average period, which allows the plants to respond to peak demand situations, balancing competing principles and NAAQS attainment.

Response

This comment is related to the July, 2015 power plant permits. In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

U.S. Steel stated that the MDEQ control strategy must not pick winners and losers. U.S. Steel emits only 6% of the SO₂ for Wayne County; 80% is emitted by two nearby power plants. The MDEQ is proposing no emission reductions from nearby competitor AK Steel, a similarly situated company in the same industry sector. Per the Michigan Air Pollution Act: “a rule...shall not discriminate in favor of or against any person...entitled to same benefits...under the same or similar circumstances” (i.e., a rule should not benefit one entity over another that is similarly situated). Further, per the Michigan Air Pollution Act, Section 24.245(k), the MDEQ must demonstrate that the proposed rule is “necessary and suitable to achieve its purpose in proportion to the burdens it places on individuals.”

Response

The two power plants alluded to in this comment are making additional actual reductions in SO₂ emissions with revised permit limits to reflect this. The allowable SO₂ emissions are also being reduced from these plants which provides for reduction in modeled SO₂ impacts. These reductions are part of the control strategy included in the SO₂ SIP. Other large facilities in the area, such as AK Steel, do not show a large enough SO₂ impact when modeled, including a cumulative impact, to require additional controls for this SIP. Contrary to U.S. Steel’s comment, the Michigan Air Pollution Act (Section 5512(g) of Act 451 of 1994) requires the MDEQ to promulgate rules to comply with the Clean Air Act and to establish suitable emission standards consistent with the NAAQS and factors including the anticipated characteristics and quantities of potential air pollution sources. U.S. Steel’s reference to Section 24.245(k) is actually from the Administrative Procedures Act, 24.245(3)(k), and refers to another requirement in the RIS when promulgating a rule; the comment does not accurately quote this provision.

However, in response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

U.S. Steel stated that the MDEQ should not rely on the proposed amendments to Part 4 rules including a control strategy that calls for a reduction in BFG at U.S. Steel's Zug Island boilers by 75% and elimination of COG at these boilers, while simultaneously reducing hot strip mill furnace emissions by 83% through a dramatic reduction in the use of COG. U.S. Steel has submitted comments separately highlighting the significant problems with the MDEQ's proposal, which have been incorporated into the SIP in Appendix F. U.S. Steel hereby incorporates all of its Part 4 comments previously submitted by reference. These comments apply equally to the proposed SIP and are therefore incorporated herein by reference.

Response

The MDEQ responses to the referenced comments are also contained in Appendix F of the SIP document.

Comment

U.S. Steel stated that technically the MDEQ has not required the use of fuel switching as the method for meeting the proposed limits because the rule does not explicitly use the term. However, the stringent limits applied to the hot strip mill and boiler houses #1 and #2 have made U.S. Steel's options from a practical perspective very limited. U.S. Steel is not aware of add-on emission controls that will be effective to the extent required by the rule and the MDEQ has identified none in the record. Cost concerns and technical infeasibility make fuel switching the only practical choice, especially if it would require multiple other options combined to achieve the same SO₂ reductions as the fuel switching option.

Response

The MDEQ has set emission limits in the proposed rule at levels that can be achieved by several available control methods. Therefore there are options to be considered besides fuel switching.

Comment

U.S. Steel stated that if the MDEQ proceeds with establishing limits for U.S. Steel, U.S. Steel requests that the MDEQ establish these limits over longer averaging times. The proposed averaging time does not offer sufficient operational flexibility and is inconsistent with the averaging times in other permits relied upon for development of the proposed SIP.

Response

The USEPA guidance for SO₂ SIP development requires hourly averages unless a demonstration is made supporting a longer averaging time. Such a demonstration has not been provided by U.S. Steel.

Comment

U.S. Steel stated that it has offered a plan that will result in reductions in actual emissions, not just dispersion or reductions from maximum allowable limits. U.S. Steel is troubled by the MDEQ's focus on mandating further emission reductions at U.S. Steel that will result in emission increases within the designated area, particularly when the area has monitored attainment of the NAAQS with U.S. Steel's current operations and the "impacts" the MDEQ seeks to address arise from modeling that is at best a speculative projection of ambient air concentrations.

Response

The proposed SIP will achieve significant reductions of SO₂ emissions from U.S. Steel, not increases. The level of reductions is necessary to eliminate hotspots caused only by U.S. Steel SO₂ emissions and thereby eliminating the overall hotspot in that vicinity.

SUMMARY (ADEQUACY OF PLAN)

USEPA COMMENTS:

1. Comment

The SIP needs to demonstrate attainment throughout the entire nonattainment area. Modeling does not reflect this, so further reductions appear necessary. As an example, the DTE River Rouge and Trenton Channel emission limits are not sufficient to address their contributions to the overall hotspot.

Response

In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

2. Comment

There are no contingency measures in proposed SIP (required per Sect. 172(c)(9) of CAA).

Response

The USEPA guidance document for SO₂ SIP development clearly states on page 41 that contingency measures are not required. The guidance explains that “contingency measures” can mean that the air agency has a comprehensive program to identify sources of violations of the SO₂ NAAQS and to undertake an “aggressive” follow-up for compliance and enforcement.

Michigan has adequate enforcement authority to enter and inspect sources based on Section 5526 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, MCL 324.5526. This is further shown by the USEPA’s approval of the Michigan Title V program. All of the sources in the SIP strategy are major sources and in the Title V program. Michigan has a USEPA-acceptable Title V compliance monitoring program, including periodic inspections, review of company monitoring records, reporting, and issuance of violation notices for all violations shown from inspections or data. Michigan responds promptly to citizen complaints. Michigan reports all high priority violations to the USEPA and puts all inspection reports and violation notices on our website. Michigan pursues enforcement actions on all USEPA-defined high-priority violations, addressing the USEPA’s Timely and Appropriate Enforcement Policy. This language will be added to the “Conclusions & Next Steps” section of the SIP document to clarify that the SIP meets the contingency measure requirements of the CAA.

3. Comment

U.S. Steel limits in the proposed Part 4 rules are consistent with the level of control needed to reach attainment.

Response

The MDEQ agrees.

4. Comment

The proposed plan does not include a final rule.

Response

The final rule will be submitted to the USEPA as a completion of the SIP when it is fully promulgated.

5. Comment

Several commenters including the USEPA stated that COG desulfurization is a feasible control to meet the limits. Most other coke facilities in the country utilize desulfurization.

Response

The MDEQ agrees that desulfurization of COG can be economically feasible. However, based on our modeling, EES Coke does not significantly contribute to high SO₂ impacts in the SO₂ nonattainment area via the burning of COG, even when all generated COG is combusted there. Their primary SO₂ emission points are a relatively tall stack and a flare, both of which provide good dispersion of SO₂. For this reason, the MDEQ has not required desulfurization at EES Coke.

The primary emission points from combustion of COG that contribute to high modeled impacts of SO₂ are U.S. Steel's reheat furnaces and boilers. This is the result of low stacks at these operations that result in high SO₂ impacts in close proximity to these sources.

Comment

DTE commented that the USEPA SIP development procedure is overly stringent because it incorporates extreme magnification of conservative assumptions. The proposed SIP takes into account the very low likelihood that all sources will emit at SO₂ limits at same time.

Response

The MDEQ acknowledges that the SIP is based on conservative modeling because of the use of allowable/potential SO₂ emissions. In spite of this and in response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

DTE stated that emission reductions from other federal programs are not required to be part of the SO₂ SIP.

Response

The MDEQ accounts for any emission reductions that are permanent and enforceable in the SIP, such as the Mercury and Air Toxics Standards rule for power plants.

Comment

DTE stated that the SIP development approach resulted in an effective attainment strategy.

Response

In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

U.S. Steel requested an additional 30 days to comment due to the complex nature of the issues. The MDEQ denied the request for an extension of the comment period, but U.S. Steel again requests that the MDEQ reopen the comment period.

Response

The MDEQ held a 45-day comment period, which is longer than the 30 days required for a SIP. In addition, U.S. Steel was familiar with the MDEQ's modeling approach, proposed Rule 430, and many other aspects of the SIP strategy from numerous discussions the MDEQ held with U.S. Steel well before the comment period began. Therefore, the MDEQ declined to reopen the comment period.

Comment

U.S. Steel stated that the MDEQ's proposed language does not accurately reflect the legal requirements imposed on Michigan by the Clean Air Act. The MDEQ is required to prepare a state implementation plan that assures and adequately demonstrates compliance with the NAAQS.

However, monitored attainment, as has been demonstrated in Wayne County at the SWHS monitor, changes these obligations. The MDEQ has been representing that the SWHS monitor is in the area of highest concentration for decades as part of its certification of the ambient monitoring network. Therefore, the MDEQ may rely on the monitored attainment at the SWHS monitor to propose a Clean Data Finding for the area. This also changes the role of modeling.

Response

The SWHS monitor is not located in a manner as to be representative of all of the areas of high 1-hour SO₂ impacts in the nonattainment area. Because of the multiple large sources in relatively close proximity, a single monitor could not accomplish this. The MDEQ modeling of actual SO₂ emissions reveal two areas that exceed the NAAQS, both of which are more than one mile from the SWHS monitor and have very localized dispersion characteristics. The commenter's argument for a Clean Data Finding is therefore not valid.

Regarding how the MDEQ has represented the SWHS monitor, Table 25 of the 2016 Ambient Air Monitoring Network Review reflects metadata for each MDEQ sulfur dioxide monitoring station entered into the USEPA's national aerometric AQS database. For the column titled "Purpose," the USEPA requires that the MDEQ select between 11 options: Upwind Background, Max Precursor Emissions Impact, Max Ozone Concentration, Extreme Downwind, Population Exposure, Source Oriented, Regional Transport, Welfare Related Impacts, Max Concentration, General/Background and Quality Assurance. Ever since the Detroit-Southwestern High School site was sited by the Wayne County Air Quality Management Division, it has recorded some of the highest SO₂ concentrations in Michigan. However, it is not being impacted by only a single specific source. For this reason, the MDEQ has designated the site as a Max Concentration site.

Comment

U.S. Steel stated that the MDEQ cannot justify its proposed control strategy to address modeled hotspots from a model that conservatively over-predicts ambient concentrations and was never designed or validated to predict specific concentrations at specific locations. Ultimately, the same model flaws that the MDEQ uses to justify its proposed control strategy at 98.1 ppb also undermine the reliability of an approach that relies on modeled hotspots to justify millions of dollars in regulatory requirements.

Response

The MDEQ recognizes that there is some overprediction with the model's use of allowable emission rates. However, the magnitude over the standard from the U.S. Steel operations under the company-proposed strategy is significant and requires substantial controls to reduce the SO₂ impacts.

Comment

U.S. Steel stated that the DTE Monroe Power Plant's SO₂ emissions and recent emission reductions should be reflected in the SIP. In fact, the modeled impact of DTE Monroe in Table 9 of the proposed SIP clearly supports U.S. Steel's position that the DTE Monroe Power Plant is in an area contributing to the ambient air quality in the Wayne County designated area that is required by the Clean Air Act to be included within the nonattainment boundary as a nearby contributing area. As such, it is appropriate to include the DTE Monroe Power Plant enforceable emission reductions as part of the SIP control strategy for Wayne County. U.S. Steel requests that the MDEQ not rely on modeling data that fails to incorporate the contemporaneous allowable emissions from the DTE Monroe Power Plant and that does not accurately show the impacts that the DTE Monroe Power Plant's recent emission reductions have had on ambient air quality in the Detroit designation area. Moreover, the 815.79 lb/hour SO₂ self-reported maximum allowable rate modeled for DTE Monroe Power Plant should be revisited to ensure that it reflects the proper operation of current controls and any further reasonably available control measures necessary to attain the NAAQS.

Response

The MDEQ modeling of the DTE Monroe plant's enforceable emission limits is part of the SIP modeling and shows low impacts. Further, the U.S. Court of Appeals for the District of Columbia Circuit denied a U.S. Steel petition challenging the boundaries of the USEPA's designation of Michigan's SO₂ nonattainment area, going against U.S. Steel's position that the DTE Monroe plant significantly contributes to nonattainment.

Comment

U.S. Steel commented that the MDEQ's decision that \$14,000 per ton SO₂ removed costs too much to control SO₂ is inconsistent with the MDEQ's proposal that U.S. Steel reduce SO₂ emissions at a cost of approximately \$27,500 per ton. See Appendix F at 6. U.S. Steel agrees that \$14,000 per ton is excessive and therefore requests the MDEQ conclude that the proposed control strategy for U.S. Steel, which exceeds that threshold, costs too much to adopt.

Response

U.S. Steel, in addressing the EES Coke estimated RACT amount of \$14,000 per ton SO₂ removed for desulfurization of the COG, misses the point that the MDEQ made regarding requiring control at EES Coke. The MDEQ continues to take the position that reducing sulfur in COG via desulfurization is a reasonable control strategy, but in the case of EES Coke, the modeled impacts of SO₂ emitted from EES Coke are small, significantly reducing a justification for the MDEQ to require them to control SO₂.

Comment

U.S. Steel commented that the fact that EES Coke's impacts after implementation of the MDEQ's proposed control strategy (Table 14b) are identical to the impacts modeled by the MDEQ for EES Coke's baseline emission impacts (Table 10) indicates that the MDEQ has failed to include the impact of a corresponding increase in flared COG at EES Coke after U.S. Steel is forced to switch to fossil fuel at its boilers and reheat furnaces under the proposed SIP.

Response

The MDEQ has consistently kept the emission rate on the EES Coke flare at the maximum SO₂ that can be combusted in the flare. This was done to ensure that the scenario described by the commenter was addressed up front, so worst case flare emissions are addressed.

Comment

Several commenters stated that desulfurization at EES Coke would reduce SO₂ emissions wherever the COG is combusted and therefore produce a smaller modeled impact and a far more cost-effective control strategy for achieving the NAAQS than some other strategies. U.S. Steel stated that the MDEQ has an opportunity to incentivize EES Coke to add desulfurization by revising its proposed SIP to require desulfurization (or a sulfur content limit that reflects desulfurized COG). Those burning COG would share in the burden as EES Coke increases the price of COG made available as fuel to recover a portion of the cost of desulfurization.

Response

Desulfurization of COG at EES Coke would be a preferred control strategy by addressing SO₂ emissions from multiple sources in the area that burn the high sulfur COG.

Comment

U.S. Steel commented that they have been unable to find technical support for the allowable SO₂ emission rates used for the MDEQ's modeling of EES Coke emissions. According to EES Coke's June 13, 2014 permit to install application, the EES flare alone may emit up to 975 lb/hour SO₂ if none of the COG is sold offsite. This appears inconsistent with MDEQ's projection that maximum allowable emissions are 354 lb/hour SO₂. U.S. Steel requests clarification on this issue and revised modeling based on the true allowable emission rate of EES Coke when customers are unable to take COG and it must be flared onsite at EES Coke.

Response

There are a variety of ways to allocate COG use. The EES Coke SIP modeling uses conservative assumptions, and a variety of other COG use scenarios were also modeled. None of these scenarios show SO₂ impacts from EES Coke to be near the SO₂ standard or warranting further evaluation.

Comment

U.S. Steel stated that the MDEQ has not explained or justified a need to go beyond RACT to achieve attainment. This conclusion is also not supported by the record. The MDEQ must first evaluate RACT for all significant sources in the designated area before looking to go beyond RACT. In addition, if the MDEQ concludes it needs to go beyond RACT after it has completed imposing all reasonably available control technologies, the MDEQ must provide a reasoned basis for selecting the sources that are to be required to go beyond RACT. The MDEQ has not done so in the proposed SIP.

Response

As previously stated, the USEPA guidance for SO₂ nonattainment areas requires the use of whatever controls are necessary to bring the area into attainment. The MDEQ has taken this approach in the SIP by first determining what level of emission reduction is necessary for each large source in the area to eliminate its own SO₂ hotspot; i.e., the hotspot created by its own emissions alone. The SIP plan accomplishes this level of control, using allowable emissions demonstrated through AERMOD modeling.

Comment

Several commenters suggested that the MDEQ should consider whether relying on dispersion in this instance will result in increased emissions of the criteria pollutant sought to be controlled as well as other pollutants. If so, the MDEQ may weigh this factor in evaluating whether the control option selected is appropriate and effective in light of alternatives that would not result in the same increase in emissions of SO₂ and other pollutants. Other commenters believe that increased dispersion is inappropriate since it is affected by weather and other factors.

Response

Dispersion is an acceptable control option for Carmeuse Lime. The USEPA guidance states that attainment of the SO₂ standard is to be demonstrated by modeling of allowable emissions from large sources in the area. The MDEQ's proposed SIP contains a control method of dispersion improvement for Carmeuse, and the subsequent further stack height increase results in the elimination of all individual and combined hotspot contributions from Carmeuse.

Comment

U.S. Steel stated that they have experience with desulfurization of COG at U.S. Steel facilities, not desulfurization of supplier COG. Trying to coordinate with outside organizations presents numerous additional hurdles that make the MDEQ's proposed option impractical to pursue. For example, U.S. Steel would have no control over the quality of the gas received from EES Coke and COG received outside of a certain quality range could damage equipment. Additionally, EES Coke has no particular incentive to work with U.S. Steel on this issue when they are not required to implement any control technologies as part of the SIP process.

The MDEQ's proposed SIP does not reflect an evaluation of the potential nonattainment impacts of other sources combusting EES Coke's COG. Since the MDEQ is relying on this option as part of its analysis of the feasibility of its proposed control strategy, the MDEQ should consider these potential impacts and incorporate them into its control strategy decision. In particular, as the MDEQ is relying on the stack height created by flaring of excess COG, the MDEQ must consider the possibility that COG sold to other customers will result in SO₂ emissions that will not be subject to the dispersion assumed by the MDEQ's model.

The MDEQ cannot justify having U.S. Steel eliminate the use of COG at great expense if the result will be other sources in the designated area combusting the same COG with potential modeled NAAQS violations. This can be avoided by desulfurizing COG where it is generated as preferred by the USEPA.

Response

The most likely scenario for other source COG combustion is at the DTE River Rouge power plant, since some COG is routed there at times. The MDEQ modeled the COG diverted to the DTE River Rouge power plant. This analysis showed little change in SO₂ impact from the power plant compared to use of coal. An increase or change in COG use would likely require air permit revisions.

Comment

U.S. Steel stated that the MDEQ has identified no basis for its assertion that BFG could be sold to another entity. BFG is a low Btu fuel that cannot be used in applications that demand high heat rate fuels. Even if excess BFG could be sold to another entity, this would give rise to the same coke issues discussed above with the MDEQ's proposal that other facilities purchase COG from EES Coke. Even ignoring these issues, flaring would still be required for backup safety reasons if a

customer was unable to take the BFG and a new flare would need to be constructed at significant cost and burden to U.S. Steel without any corresponding environmental benefit.

Response

If additional flaring of the BFG would be necessary, air permit revisions would be required and would need to meet all requirements for permitting sources in nonattainment areas. The bottom line is that there exist controls besides fuel switching that are technically available to reduce SO₂ impacts from BFG combustion.

Comment

U.S. Steel stated that SO₂ emissions will increase under the MDEQ's proposed control strategy for the reduction of SO₂, and this is problematic and inconsistent with the purpose of the proposed SIP.

Response

The purpose of the SIP is to demonstrate that SO₂ impacts, not emissions, are reduced to acceptable levels. That is the reason the MDEQ includes improved dispersion of SO₂ as an acceptable control option, even though SO₂ emissions may not be reduced. The USEPA also recognizes this as a legitimate control method for SIPs, as long as a stack is not above the Good Engineering Practice height.

Comment

U.S. Steel stated that it has submitted a proposal that would result in reductions to actual emissions in the designated area.

The MDEQ is further required to evaluate alternatives to regulation, including pursuit of a clean data finding and expansion of its RACT analysis to all significant sources contributing the monitored SO₂ concentrations in the designated area, and not just those that have been modeled to exceed 60 ppb SO₂.

U.S. Steel has requested that the MDEQ evaluate control options that are technically feasible and cost effective, including adjusting the control plan to reflect current emissions and needed operational flexibility. The MDEQ should evaluate this strategy for all significant sources before proposing additional beyond-RACT controls.

While the MDEQ has modeled allowable/potential emissions to account for possible future increases in emissions permissible under maximum operation, the MDEQ has also acknowledged in the proposed SIP that these assumptions do not present a realistic prediction of future emissions. The MDEQ must incorporate this as well into its control plan analysis.

Response

The MDEQ agrees that the U.S. Steel proposal would reduce actual emissions from boiler #4 in boiler house #1 because the proposal is to shut down the boiler. However, the remainder of the proposal from U.S. Steel will retain emissions higher than the actuals reported for 2013, the most recent year of emission information.

The MDEQ has used modeling inputs with the allowable/potential emissions for all sources as required by the USEPA. The MDEQ has taken the position that the results of modeling at these levels is somewhat conservative and this should be taken into account in the final modeling outcome as has been done.

The commenter suggests requiring a RACT analysis for all significant sources contributing to the monitored SO₂ concentrations in the designated area, and not just those that have been modeled to exceed 60 ppb SO₂. The MDEQ has evaluated other large sources of SO₂ in the area and determined that they do not cause a hotspot themselves, and because of their location in relationship to the other large sources in the area, those sources contribute to overall hotspot impacts in only a small measure if at all.

Comment

U.S. Steel stated that the modeling proposed in the USEPA's guidance for a Clean Data Finding is different than the modeling the MDEQ has done for development of the control plan. The USEPA guidance directs use of three years of actual past emissions data, which the MDEQ's modeling does not satisfy. The USEPA guidance further makes clear that modeled hotspots are not relevant to the issue of evaluating proper location of a monitor for measurement of maximum concentration. Instead, the USEPA guidance recommends using normalized data to focus on the relationship between local maxima to identify the source of the most likely highest concentration. A single year hotspot 1.5 miles from the SWHS monitor does not undermine the fact that it is in the proper location for a Clean Data Finding. This is also well within the neighborhood scale of the SWHS monitor.

Response

The MDEQ agrees that the actual emissions modeling run in the SIP used only 2013 SO₂ emissions data, but points out that the emission values for the modeled sources varied little over the years of 2011 through 2013, so an average of the three years will model virtually the same as the SIP model run.

With respect to the relevance of modeled hotspots, the USEPA has told the MDEQ that this argument is inappropriate for a Clean Data assessment and that it only applies to siting of a monitor. The discussion of using normalized emission rates rather than actual emission rates is in the USEPA's Technical Assistance Document on SO₂ NAAQS Designations Source Oriented Monitoring, not in the Clean Data Determination Policy, and relates to siting monitors at the location of maximum impacts.

Comment

Many commenters stated that the draft plan falls far short of bringing the area into attainment and must be revised to comply with the law. The currently proposed SIP includes modeled predictions of 98.1 ppb for the maximum cumulative hotspot and a hotspot at the SWHS monitor of 87.6 ppb. Emission limits are inadequate to achieve attainment as shown by MDEQ's modeling analysis, particularly for the DTE River Rouge and DTE Trenton Channel plants.

Response

In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carneuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

Several commenters stated that the plan does not require any meaningful reduction in actual SO₂ emissions.

Response

The SIP is based on allowable emissions per USEPA guidelines, and the requirement is to show by modeling that attainment will be reached by lowering allowable emissions. Comparing this to actual impacts and emissions is not the intent of the SIP, because actual emissions can increase in the future whereas allowables will not and therefore represent the worst case scenario.

Comment

Several commenters stated that the MDEQ continues to dismiss concerns about SO₂ impacts as a “theoretical” problem based on an “extreme” scenario. In reality, SO₂ poses a serious health threat in the area.

More controls are needed because the Wayne County SO₂ nonattainment area includes the state’s most polluted zip code (48217 neighborhood). A 2008 Michigan Department of Community Health survey identified Detroit as the epicenter of asthma burden in Michigan. Ninety-two schools are located in the SO₂ nonattainment area. The Detroit Alliance for Asthma Awareness lists asthma as the leading chronic condition causing school absenteeism in Detroit and also identifies schools in the most polluted zones with the highest percentage of minority students.

Children are at an even higher risk of health impacts from cumulative exposure, and lowering thresholds on allowable emissions would be a prudent and diligent precaution in assuring children’s health and well-being. Cumulative impact on human health should remain a high priority area for state agency attention and plan/policy development.

Response

The 1-hour SO₂ standard was set by the USEPA as a health standard, and the MDEQ recognizes that the standard must be met everywhere in the area to protect the citizens. It is encouraging to see that SO₂ impacts in the area are continuing to come down as reflected by the SWHS air monitor attaining the 75 ppb standard with the latest 3-year average of monitored data. In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

Several commenters stated that if the MDEQ does not expeditiously revise the plan, the USEPA must step in and issue a compliant plan.

Response

The USEPA does have the authority to impose a Federal Plan if they do not accept the SIP. However, In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

Several commenters stated that the MDEQ acknowledges in the plan that their strategy will not reduce impacts below the NAAQS.

Response

In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

Several commenters stated that, for the DTE power plants, proposed limits are on a 720-hour rolling basis but only 1-hour limits can fully ensure compliance with the 1-hour NAAQS.

Response

The MDEQ accepted the 720-hour rolling average averaging time based on a demonstration provided by DTE supporting this approach. The USEPA 1-hour SO₂ nonattainment area SIP guidance allows states to approve emission limits with up to 30-day averaging times if a demonstration is provided showing that the longer term average limits are as stringent as the associated 1-hour limits determined by modeling analysis. A description of this demonstration is contained in Appendix C of the proposed SO₂ SIP.

The DTE demonstration was based on 3.5 years of hourly CEM data from the DTE River Rouge and Trenton Channel power plants showing the extent of variability from hourly to a 720-clock hour rolling average basis. The demonstration showed a 15 percent level of variability at both the DTE River Rouge and Trenton Channel power plants, and the permit limits were adjusted by multiplying by 1.15 when used as inputs to modeling to reflect the 1-hour emissions more closely.

Comment

Several commenters stated that the SIP does not clearly establish permanent and enforceable limits per Clean Air Act requirements as would be the case if all limits were incorporated in rules.

Response

The MDEQ is basing the 1-hour SO₂ SIP attainment strategy on provisions in air permits for Carmeuse, DTE, and EES Coke. The proposed SIP requests that these permit requirements be made part of the Michigan SIP for SO₂. All terms and conditions of each permit will be incorporated into the ROP for each facility and a source-wide Permit to Install will be issued per Michigan Rule R 336.1214a requirements as part of the ROP (contained within the ROP document). DTE Permits 40-08G and 125-11B, EES Coke Permit 51-08C, and Carmeuse Permit 193-14 will be voided upon their incorporation into the respective facility ROPs and source-wide Permits to Install. The source-wide Permits to Install for each facility will incorporate all federally enforceable requirements at the facility (R 336.1214a(1)). Also, Michigan Rule R 336.1214a(4) specifies that "...if the renewable operating permit expires or is voided the source-wide permit to install remains in effect, unless the criteria of R 336.1201(6)(a) or (6)(c) are met." Therefore, the MDEQ considers these source-wide Permits to Install as permanent and enforceable for purposes of the SO₂ SIP.

Comment

Several commenters stated that the MDEQ failed to submit the SIP within the 18-month Clean Air Act deadline.

Response

The MDEQ acknowledges this but points out that none of the compliance schedules in the SIP have been lengthened to account for this, so emission reductions in the SIP will occur the same as if the SIP was submitted by the April, 2015 SIP deadline.

Comment

Several commenters stated that the MDEQ's June 2014 draft rule should be used for the SIP instead of the current SIP strategy. Other commenters said that if the MDEQ promulgated their June 2014 version of the SIP with a few minor improvements, attainment could be demonstrated.

Response

The MDEQ agrees that modeling of the 2014 draft rule limits resulted in some lower values but points out that the June 2014 plan was only intended as a starting point for discussions with the affected companies. Three of the four companies agreed to strategies that differed from the proposed rule but were deemed acceptable to the MDEQ.

Comment

Several commenters stated that the MDEQ accepted proposed limits from the affected companies and incorporated these limits in the SIP. The Clean Air Act requires a SIP that "provides for attainment...as expeditiously as practicable"; and the Clean Air Act does not require the MDEQ to obtain voluntary commitments from the regulated entities to reduce emissions.

Response

In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

Many commenters stated that the SIP fails to comply with the law and prolongs the significant public health and environmental justice impact of SO₂ in Wayne County.

Response

The MDEQ continues to be concerned about public health and environmental justice issues in the area. In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

A commenter stated that the SWHS monitor exceeded 75 ppb twice in 2014 (102 ppb on one date), and DTE's Delray monitor reached 92 ppb twice in 2015. The MDEQ's contention that the modeled exceedances will never occur in 'reality' is thus inaccurate.

Response

The MDEQ points out that the SWHS monitor did not violate the standard. The occasional high value does not equate to a violation until the average of the 4th high value over three years exceeds the standard.

Comment

The Sierra Club stated that the MDEQ claims of a proposed SIP control strategy resulting in a substantial reduction in the impact of allowable emissions in the nonattainment area – a 72% reduction, are extremely misleading because it is based only on the change in allowable emissions at the units and does not reflect the change in actual emissions between the base case and Proposed Plan scenarios. Under the MDEQ's Proposed SIP, only U.S. Steel Ecorse and Zug Island would be required to reduce their emissions below what they actually emitted in 2013.

Response

In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

The Sierra Club stated that the MDEQ attempted to justify not demonstrating compliance with the NAAQS at modeled hotspot locations with the statement, "SWHS monitor is currently reflecting a 3-year design value for 2012-2014 that is at 72.4 ppb." This statement and other similar claims ignore the fact that the SWHS monitor measures air quality in only a single discrete location in a nonattainment area that is 40 kilometers long by six kilometers wide. Because of the inability of monitors to fully assess the ambient impacts of SO₂ emissions from major pollution sources, the USEPA has long recognized the importance of using air quality modeling to evaluate whether an area is in attainment with SO₂ air quality standards.

Response

The MDEQ has stated that the SWHS monitor is now attaining the standard to highlight the fact that SO₂ impacts in the area have been improving, not to suggest that the one monitor represents SO₂ levels throughout nonattainment area. In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

The Sierra Club commented that the MDEQ has made no demonstration that the limited circumstances in which the USEPA approves of longer emission averaging times apply to the two DTE power plants. In addition, Sierra Club states that it appears that in calculating the conversion factors, DTE did not exclude hours in which the plants were not operating, in contravention of USEPA guidelines. Also, they state the MDEQ has made no effort to evaluate whether the magnitude and frequency of periods of hourly emissions above the critical emissions value are likely to occur with the 720-hour averaging times.

Response

The MDEQ did in fact provide the demonstration in the proposed SIP used by DTE to account for variability in SO₂ emissions when using the higher averaging time. The MDEQ also checked the DTE calculations including running the analysis both with and without hours when the plants were not operating. In doing so, it was found that there was virtually no difference in the results.

Comment

Several commenters stated that August 20 to October 5 is a rather brief window for public review and comment on such dense, technical material in the SIP and asked if there will be opportunity for further review and comment before finalizing the plan. They also wondered if communities have access to technical experts to help them interpret the SIP.

Response

The MDEQ is not planning at this time to extend the comment period on the SIP. There is always the opportunity for receiving more information on the SIP by contacting the MDEQ, Air Quality Division.

Comment

Several commenters suggested that the MDEQ consider increasing monitoring capacity in the southeast region.

Response

The MDEQ follows the USEPA's requirements on establishing monitor locations. The MDEQ's monitoring network is reviewed annually as mandated by the USEPA in the Annual Network Review. The Network Review is sent out for public comment each May before it is submitted to the USEPA. Past Network Reviews can be found at http://www.michigan.gov/deq/0,4561,7-135-3310_4195---,00.html. In addition, monitoring is constricted by available funding.

Comment

A commenter stated that the MDEQ should require CEMs on all major sources.

Response

The MDEQ agrees that CEMs data is valuable for purposes of demonstrating attainment with a 1-hour NAAQS, and the power plants already have CEMs in place. In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

A commenter suggested that COG and BFG should be evaluated in an integrated approach for a more environmentally beneficial strategy.

Response

The MDEQ agrees and has encouraged EES Coke and U.S. Steel, the producers of these potential fuels, to work together in developing control strategies.

Comment

Several commenters suggested that companies should pay for needed control measures - not citizens. For example, residents can't afford air conditioning needed to keep SO₂ from getting in homes. Companies need to prioritize health over corporate profits.

Response

The MDEQ agrees that the companies causing the problems should be accountable for fixing the problems. The proposed SIP is intended to accomplish this. In response to comments on the proposed SIP, the MDEQ has further evaluated possible control strategies to determine what changes should be made to model attainment of the SO₂ NAAQS throughout the whole nonattainment area. This resulted in further reduced emissions in revised permits for the DTE power plants and a stack height increase for Carmeuse Lime, which will achieve additional SO₂ impact reductions sufficient to attain the NAAQS throughout the nonattainment area.

Comment

Several commenters stated that the proposed plan is too much too fast and that it will kill industry and jobs in this area. Clean the air at a steady pace and let workers keep their jobs.

Response

The MDEQ is concerned about everyone impacted by this plan, both those in the area with health concerns and those who rely on these companies for their livelihood. Efforts are being made to craft a plan that addresses both. However, the MDEQ is following the timetable established by federal law to address the high levels of SO₂ in the area.

Comment

A commenter stated that the plan needs to be implemented, but may require impacts lower than 70 ppb. The lower the better, as it affects people's health and lives.

Response

The MDEQ acknowledges that meeting the current 1-hour standard of 75 ppb will be a challenge. The USEPA is required to reevaluate the NAAQS every five years to determine if it is appropriate to tighten the standards. There is no proposal from the USEPA to do so at this time.

Comment

A commenter stated that the U.S. Steel rule needs to be adopted to remove their own hotspots.

Response

The MDEQ agrees.

Comment

A commenter stated that some reduction in SO₂ should occur at all sources in the area.

Response

The MDEQ is most concerned about the larger sources of SO₂ in the area and that they make significant reductions in SO₂ impacts so as to bring the area into attainment of the NAAQS. While smaller sources of SO₂ emissions exist in the nonattainment area, it is the larger sources that have the biggest SO₂ impacts and thus likely the most cost-effective reduction opportunities.

DTE TRENTON CHANNEL – PTI Application Nos 227-15 and 125-11C

State Implementation Plan (SIP)

These comments are directly related to the draft SIP and were received outside of the public comment period associated which closed in September of 2015. However, the MDEQ recognizes the importance of providing a response to these comments.

Comment

Several commenters raised concerns about the elevated levels of SO₂ in the SO₂ nonattainment area in Wayne County and noted the emission limits proposed and associated dispersion modeling would be inadequate to satisfy the Clean Air Act SIP provisions. They requested the limits be made more stringent.

MDEQ Response

A net SO₂ emissions reduction of over 4000 tons per year will result from the changes under PTI Nos. 227-15 and 125-11C. While these reductions alone will not bring the portion of Wayne County that is currently in nonattainment for SO₂ back into attainment, they will play a role.

The MDEQ has re-evaluated the options for further SO₂ emission reductions than was in the proposed SIP which underwent public comment in September, 2015, and developed an approach that will satisfy all requirements. In addition to these changes at DTE Trenton Channel, the approach calls for a minimum reduction of 45 percent at the DTE River Rouge power plant due to the shutting down of Unit 2; a 120-foot tall exhaust stack at Carmeuse Lime; and the passage of a new state rule, draft Rule 430, which will establish reduced SO₂ limits for U.S. Steel's Zug Island boiler houses and the hot strip mill reheat furnaces at their Ecorse facility. These changes and some model refinements, result in a demonstration of the entire nonattainment area in Wayne County modeling attainment for the SO₂ 1-hour NAAQS. The MDEQ is planning to submit the updated SIP to USEPA in May, 2016 after the DTE permit changes are complete. The draft U.S. Steel rule will serve as a placeholder in the SIP for the final rule, which will be submitted to the USEPA as soon as it becomes final.

Comment

The proposed permits should be modified to include the SO₂ emission limit for Trenton Channel Unit 9A that was included in MDEQ's June, 2014 Draft Plan.

MDEQ Response

MDEQ did not release a draft SIP revision for public comment in June of 2014. The draft SO₂ SIP was proposed on August 20, 2015. There are no differences in the allowable sulfur dioxide hourly emission rate for Unit 9A between what was proposed in 2015, what is being included in the May SIP submittal, and what is contained in the permits.

Comment

The SO₂ nonattainment area has been out of attainment for a year beyond the deadline, which is unacceptable. Additionally there are two years to implement the necessary revisions to the SIP to address the nonattainment area.

MDEQ Response

The MDEQ acknowledges that the final SIP is late in being sent to USEPA, but points out that the submittal date is not the same as the attainment dates contained in the permits and draft rule. The area must be in attainment by late 2018, and the dates in the permits and rule are intended to accomplish this.

MARATHON PETROLEUM LP – PTI Application Nos 118-15 and 122-15

State Implementation Plan (SIP)

These comments are directly related to the draft SIP and were received outside of the public comment period associated which closed in September of 2015. However, the MDEQ recognizes the importance of providing a response to these comments.

Comment

The MDEQ needs to look at the total SO₂, not just SO₂ from the proposed increase.

MDEQ Response

The ambient air monitors in the area measure the total SO₂ emissions from all sources. This data indicates that the actual levels of SO₂ comply with the NAAQS.

The air dispersion modeling study for the SIP process also takes into consideration all of the SO₂ emissions in the area, either directly or as background. This modeling shows that there are four receptors in the nonattainment area that could have SO₂ levels above the NAAQS. However, the contribution from the approximately 400 tpy allowed SO₂ emissions from the Marathon Detroit Refinery is 0.1 ppb or less at these receptors. Marathon's emissions are not contributing to the modeled exceedances of the NAAQS. Since the projects will not result in an increase in allowed SO₂ emissions, the facility's contribution to the modeled NAAQS exceedances will not change.

Comment

The MDEQ does not show how SO₂ plumes go beyond the defined nonattainment region. In addition, the Fort Street monitor is east and north of the modeled hotspot, so concentrations are likely higher than those captured by this monitor (which recorded the NAAQS exceedance). None of this information has been presented in the proposed PTI or the proposed SIP, but it is necessary for understanding the impacts of SO₂ emissions in Detroit. The MDEQ should provide a comprehensive modeling analysis that uses allowable emissions for all SO₂ sources, with appropriate background concentrations, and incorporate a margin of safety given that the commenter alleges that SO₂ is affecting the health of Detroiters at levels below the NAAQS.

MDEQ Response

The PTI application review process evaluates the proposed emissions from the proposed project. As discussed below, the proposed SO₂ increase from the Tier 3 Fuels Project would not result in ambient SO₂ concentrations that would cause or contribute to an exceedance of the SO₂ NAAQS.

The MDEQ is in the process of addressing the NAAQS nonattainment area. The modeling analysis the commenter referred to has been conducted for the SIP process and the information is available from the MDEQ upon request.

Comment

The Marathon Detroit refinery is located in an area designated as "nonattainment" for the one hour SO₂ NAAQS. Allowing a 22 tpy increase in SO₂ emissions will only make the problem worse and should not be allowed.

MDEQ Response

The MDEQ evaluated the proposed SO₂ increase from the projects using the dispersion modeling methodology used for the SIP process. This modeling shows that a 22 tpy SO₂ increase from the Marathon Detroit Refinery would result in a maximum ambient concentration of 0.5 ppb at the refinery; this concentration would decrease with distance from the refinery. Given that the air

monitoring data shows ambient levels are at least 10 ppb below the NAAQS of 75 ppb, a 0.5 ppb increase would not interfere with bringing the area into attainment with the NAAQS.

Comment

A presentation given by the MDEQ in April of 2015 showed that the 3-year average of 99% maximum daily 1-hour SO₂ levels at Southwestern High School for the past 30 years, since 1984, has been above 75 ppb.

In addition, the ambient monitoring data show high levels of SO₂; 108 ppb at one of the Marathon monitors and a little lower at Southwestern High School; it is affecting people's health.

MDEQ Response

While it is true that the SO₂ monitor at Southwestern High School has shown hourly numbers above the NAAQS of 75, the most recent data shows that the 75 ppb NAAQS is now being met (see Appendix D, Figure 2).

The NAAQS for SO₂ is a three year average of the 99th percentile of hourly values. This means that there may be individual hours that exceed 75 ppb while still meeting the three-year average. The USEPA sets the NAAQS to be protective of public health.

Note the current 75 ppb NAAQS was set in 2010. Since October 20, 1982, the entire State of Michigan complied with the previous NAAQS, which was replaced by the 75 ppb NAAQS.

Comment

MDEQ has not produced an adequate plan to address the SO₂ nonattainment area. No permit should be issued until an adequate plan is developed.

MDEQ Response

There is no legal basis for the MDEQ to deny an air permit application on the basis that an attainment plan has not been developed.

Comment

There should be a moratorium on additional pollution emissions until the area meets the SO₂ NAAQS.

MDEQ Response

There is no legal basis for the MDEQ to deny an air permit application on the basis that the facility is located in a nonattainment area. The NANSR program specifically allows for increases in nonattainment pollutants when the increase is less than the SER. The MDEQ evaluated the proposed SO₂ emission increase from the Tier 3 Fuels Project and determined that it will not interfere with attaining the NAAQS.

Comment

The modeling that shows hotspots located away from the ambient SO₂ monitors highlight the need for additional SO₂ monitoring in the area.

MDEQ Response

The modeling carried out by the MDEQ does show areas where SO₂ concentrations exceed the levels being recorded at the MDEQ's Southwestern High School air monitoring station. The MDEQ is working with the citizens of southwest Detroit to install a new air monitoring station in the 48217 community.

Comment

No permit should be granted to any company proposing to increase emissions until the MDEQ creates a plan to reduce emissions in areas disproportionately impacted by industries.

MDEQ Response

There are no laws, rules, or regulations that require the MDEQ to develop a plan to reduce emissions in areas disproportionately impacted by industries or that allow the MDEQ to not issue permits until such a plan is developed. The air permitting process involves a thorough review of the proposed Tier 3 Fuels Project and the LPG Storage and Transfer Project and the projects' impacts on the environment, including whether or not the projects meet the applicable air quality rules and regulations. The MDEQ reviewed the permit applications and has determined that the proposed projects meet the applicable rules and requirements.

APPENDIX L USEPA SIP Checklist

The following shall be included in plan submissions for review by the USEPA:

1. Administrative Materials

(a) A formal letter of submittal from the Governor or his designee, requesting USEPA approval of the plan or revision thereof (hereafter “the plan”).

A letter dated January 6, 2016, from Governor Rick Snyder to the USEPA, Region 5, delegates authority from the Governor to the MDEQ Director to make any SIP submittal, request, or application under the CAA. This letter is available upon request. This is the delegation of authority as requested. A cover letter will be included with the SIP submittal to the USEPA and signed by the MDEQ Director.

(b) Evidence that the State has adopted the plan in the State code or body of regulations; or issued the permit, order, consent agreement (hereafter “document”) in final form. That evidence shall include the date of adoption or final issuance as well as the effective date of the plan, if different from the adoption/issuance date.

The three approved and signed permits to be made part of the SO₂ SIP are included in Appendices D, G, and H of this SIP submittal, for Carmeuse Lime, DTE River Rouge power plant, and DTE Trenton Channel power plant, respectively.

Rule 430 is in Appendix E of this SIP submittal, to be made part of the SO₂ SIP. The rule has an effective date of June 14, 2016. Certifications for the rule are included in Appendix E. Appendix F contains the notice of public hearing and the comment and response document.

(c) Evidence that the State has the necessary legal authority under State law to adopt and implement the plan.

Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and Executive Reorganization Order 2011-1 provides the MDEQ with the legal authority under State law to implement and enforce the provisions of the State SIP. A copy has been submitted to the USEPA through previous SIP submittals and is available upon request.

(d) A copy of the actual regulation, or document submitted for approval and incorporation by reference into the plan, including indication of the changes made (such as, redline/strike-through) to the existing approved plan, where applicable. The submittal shall be a copy of the official State regulation/document signed, stamped and dated by the appropriate State official indicating that it is fully enforceable by the State. The effective date of the regulation/document shall, whenever possible, be indicated in the document itself. If the State submits an electronic copy, it must be an exact duplicate of the hard copy with changes indicated, signed documents need to be in portable document format, rules need to be in text format and files need to be submitted in manageable amounts (e.g., a file for each section or chapter, depending on size, and separate files for each distinct document) unless otherwise agreed to by the State and Regional Office.

See the information in (b).

(e) Evidence that the State followed all of the procedural requirements of the State's laws and constitution in conducting and completing the adoption/issuance of the plan.

The three permits are completed and signed and thus meet all State requirements.

For Rule 430, see the information in (b).

The SIP public comment details and comment and response document are included in the Appendix K of this SIP submittal.

(f) Evidence that public notice was given of the proposed change consistent with procedures approved by the USEPA, including the date of publication of such notice.

See the information in (e).

(g) Certification that public hearing(s) were held in accordance with the information provided in the public notice and the State's laws and constitution, if applicable and consistent with the public hearing requirements in 40 CFR 51.102.

See the information in (e).

(h) Compilation of public comments and the State's response thereto.

See the information in (e).

2. Technical Support

(a) Identification of all regulated pollutants affected by the plan.

This SIP clearly reflects that it is for SO₂ only.

(b) Identification of the locations of affected sources including the USEPA attainment/nonattainment designation of the locations and the status of the attainment plan for the affected areas(s).

The source locations are identified in the SIP section titled Large SO₂-emitting Facilities. The sources are located in the area in Wayne County designated as nonattainment by the USEPA, which is included in the SIP section titled Nonattainment Area Designation.

(c) Quantification of the changes in plan allowable emissions from the affected sources; estimates of changes in current actual emissions from affected sources or, where appropriate, quantification of changes in actual emissions from affected sources through calculations of the differences between certain baseline levels and allowable emissions anticipated as a result of the revision.

The changes in plan allowable emissions are identified in the SIP section titled Modeling Scenarios. The difference in the Base Case and Final SIP Control Strategy Scenarios provides the changes in allowable emissions.

(d) The State's demonstration that the national ambient air quality standards, prevention of significant deterioration increments, reasonable further progress demonstration, and visibility, as applicable, are protected if the plan is approved and implemented.

The SIP demonstrates via modeling in the SIP section titled Final Company Compliance Plans that the 1-hour SO₂ NAAQS is met throughout the nonattainment area when the three permits and Rule 430 are implemented.

(e) Modeling information required to support the proposed revision, including input data, output data, models used, justification of model selections, ambient monitoring data used, meteorological data used, justification for use of offsite data (where used), modes of models used, assumptions, and other information relevant to the determination of adequacy of the modeling analysis.

Modeling information is identified in the SIP sections titled Modeling Protocol and Modeling Details. Modeling input and output files will be submitted electronically to the USEPA.

(f) Evidence, where necessary, that emission limitations are based on continuous emission reduction technology.

Emission impacts are reduced via a new stack at Carmeuse, which will provide continuous reduction in SO₂ impact. At the DTE power plants, the emission limits provide continuous emission reductions via permanently shut down boilers. Rule 430 allows U.S. Steel until August 31, 2016, to tell the MDEQ how the emission limits in the rule will be achieved.

(g) Evidence that the plan contains emission limitations, work practice standards and recordkeeping/reporting requirements, where necessary, to ensure emission levels.

The pound per hour emission limits in Rule 430 are the values which the MDEQ models to determine the maximum level of SO₂ control needed. The monitoring and recording provisions in the rule insure compliance with the limits. The same is true for Carmeuse, where the emission limit in conjunction with the stack height are modeled and show acceptable SO₂ impacts. For the two DTE power plants, the permits exclude the shutdown boilers, and the remaining allowed SO₂ emissions are modeled and show acceptable SO₂ impacts. These emission limitations are included in legally enforceable permits and rule to become part of the SIP.

(h) Compliance/enforcement strategies, including how compliance will be determined in practice.

The three permits and Rule 430 contain adequate measures for MDEQ field staff to determine if compliance is being achieved. The MDEQ has an enforcement unit that will adequately address any enforcement issues that arise.

(i) Special economic and technological justifications required by any applicable USEPA policies, or an explanation of why such justifications are not necessary.

For determining appropriate levels of control in this SIP, the MDEQ has followed the USEPA guidance on the use of RACT for SO₂. Provisions in the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990 state, "The definition for RACT for SO₂ is that control technology which is necessary to achieve the NAAQS (40 CFR Part 51.100 (o))." This is the basis for the level of control required from the affected facilities, such that the entire SO₂ nonattainment area demonstrates attainment when the controls are in place.