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Particulate Emission Compliance Test Report

We Energies
Presque Isle Power Plant
Flue 5 Stack
Marquette, Michigan
June 25, 2015

Report Submittal Date:
July 29, 2015

Project No. M152202R

888 Industrial Drive
Elmhurst, Illinois 60126
630-993-2100

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

RENEWABLE OPERATING PERMIT REPORT CERTIFICATION

Authorized by 1994 P.A. 451, as amended. Failure to provide this information may result in civil and/or criminal penalties.

Reports submitted pursuant to R 336.1213 (Rule 213), subrules (3)(c) and/or (4)(c), of Michigan's Renewable Operating Permit (ROP) program must be certified by a responsible official. Additional information regarding the reports and documentation listed below must be kept on file for at least 5 years, as specified in Rule 213(3)(b)(ii), and be made available to the Department of Environmental Quality, Air Quality Division upon request.

Source Name: Presque Isle Power Plant — County: Marquette

Source Address: 2710 N. Lakeshore Blvd. — City: Marquette

AQD Source ID (SRN): B4261 — ROP No.: MI-ROP-B4241-2013b — ROP Section No.: C.V.

Please check the appropriate box(es):

☐ **Annual Compliance Certification (Pursuant to Rule 213(4)(c))**

Reporting period (provide inclusive dates): From _____ To _____

☐ 1. During the entire reporting period, this source was in compliance with **ALL** terms and conditions contained in the ROP, each term and condition of which is identified and included by this reference. The method(s) used to determine compliance is/are the method(s) specified in the ROP.

☐ 2. During the entire reporting period this source was in compliance with all terms and conditions contained in the ROP, each term and condition of which is identified and included by this reference, **EXCEPT** for the deviations identified on the enclosed deviation report(s). The method used to determine compliance for each term and condition is the method specified in the ROP, unless otherwise indicated and described on the enclosed deviation report(s).

☐ **Semi-Annual (or More Frequent) Report Certification (Pursuant to Rule 213(3)(c))**

Reporting period (provide inclusive dates): From _____ To _____

☐ 1. During the entire reporting period, **ALL** monitoring and associated recordkeeping requirements in the ROP were met and no deviations from these requirements or any other terms or conditions occurred.

☐ 2. During the entire reporting period, all monitoring and associated recordkeeping requirements in the ROP were met and no deviations from these requirements or any other terms or conditions occurred, **EXCEPT** for the deviations identified on the enclosed deviation report(s).

☒ **Other Report Certification**

Reporting period (provide inclusive dates): From 6/04/15 To 6/25/15

Additional monitoring reports or other applicable documents required by the ROP are attached as described:

Particulate Emissions Compliance Test Reports:

M152202R We Energies PIPP Flue5 6/25/15; M152202L We Energies PIPP Flue6 6/05/15;

M152202M We Energies PIPP Flue7 6/04/15; M152202N We Energies PIPP Flue8 6/04/15;

M152202O We Energies PIPP Flue9 6/04/15

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this report and the supporting enclosures are true, accurate and complete

Leslie D. Kowalski	Asset Manager - PIPP	906-226-5757
Name of Responsible Official (print or type)	Title	Phone Number
Leslie D. Kowalski		07/29/2015
Signature of Responsible Official		Date

* Photocopy this form as needed.

EQP 5736 (Rev 11-04)

1.0 EXECUTIVE SUMMARY

MOSTARDI PLATT conducted a particulate emissions compliance test program for We Energies at the Presque Isle Power Plant on the Flue 5 Stack in Marquette, Michigan on June 25, 2015. This report summarizes the results of the test program and test methods used.

The test location, test date, and test parameter are summarized below.

TEST INFORMATION		
Test Location	**Test Date**	**Test Parameter**
Flue 5 Stack	June 25, 2015	Filterable Particulate Matter (PM) (Method 5)

The purpose of this test program was to evaluate the particulate emissions on the Flue 5 Stack during normal operating conditions to satisfy compliance requirements of the operating permit. Selected results of the test program are summarized below. A complete summary of emission test results follows the narrative portion of this report.

TEST RESULTS			
Test Location	**Test Date**	**Parameter**	**Emission Rates**
Flue 5 Stack	6/25/15	lb/hr	2.041
		lb/mmBtu	0.0032
		lbs/1000 lbs wet @50% excess air	0.00305
		lbs/1000 lbs dry @50% excess air	0.00330

The compliance test program was conducted at the same time as the consent decree test program. The compliance test program uses Runs 1, 3, and 4. Operating data as provided by We Energies are found in Appendix A.

The identifications of individuals associated with the test program are summarized below.

TEST PERSONNEL INFORMATION		
Location	**Address**	**Contact**
Test Coordinator	We Energies Presque Isle Power Plant Marquette, Michigan	Ms. Brenda Bergemann (414) 221-2459 (phone) Brenda.Bergemann@we-energies.com
Testing Company Representative	Mostardi Platt 888 Industrial Drive Elmhurst, Illinois 60126	Mr. Larry Sorce (630) 993-2100 (phone) lsorce@mp-mail.com

The test crew consisted of Messrs. A. Hasan, R. Iozzo, J. Keable and L. Sorce of Mostardi Platt. Mr. Mark Dziadosz of the State of Michigan Department of Environmental Quality observed a portion of the test program. He also requested a train blank analysis, which is appended.

2.0 TEST METHODOLOGY

Emissions testing was conducted following the methods specified in 40 CFR, Part 60, Appendix A. A drawing depicting the sampling ports and test point locations is found in Appendix B, drawings depicting sampling trains are found in Appendix C, explanations of nomenclature and calculations are found in Appendix D, sample analysis data are found in Appendix E, reference method data are found in Appendix F, field data sheets are found in Appendix G and calibration data are found in Appendix H. Operating data are found in Appendix A.

The following methodologies were used during the test program:

Method 1 Sample and Velocity Traverse Determination

Test measurement points were selected in accordance with Method 1. The characteristics of the measurement location are summarized below.

TEST POINT INFORMATION				
Location	Upstream Diameters	Downstream Diameters	Test Parameter	Number of Sampling Points
Flue 5 Stack	> 2.0	> 8.0	PM	12

Method 2 Volumetric Flow Rate Determination

Gas velocity was measured following Method 2, for purposes of calculating the gas volumetric flow rate. An S-type pitot tube, incline manometer, thermocouple and temperature readout were used to determine gas velocity at each sample point at the Flue 6 Stack test location. All of the equipment used was calibrated in accordance with the specifications of the Method. Calibration data are presented in Appendix H.

Method 3A Carbon Dioxide (CO_2) and Oxygen (O_2) Determination

Stack gas carbon dioxide (CO_2) and oxygen (O_2) content was determined in accordance with Method 3A. A Servomex analyzer was used to determine flue gas CO_2 and O_2. All of the equipment used was calibrated in accordance with the specifications of the Method. Calibration data are presented in Appendix H and copies of the gas cylinder certifications are found in Appendix I.

Method 5 Particulate Determination

Stack gas particulate concentrations and emission rates were determined in accordance with Method 5, 40 CFR, Part 60, Appendix A. An Environmental Supply Company, Inc. sampling train was used to sample stack gas at an isokinetic rate, as specified in the Method. Particulate matter in the sample probe was recovered using an acetone rinse. The probe wash and filter catch were analyzed by Mostardi Platt in accordance with the Method in the Elmhurst, Illinois laboratory. Laboratory data are found in Appendix E. All of the equipment used was calibrated in accordance with the specifications of the Method. Calibration data are presented in Appendix H.

3.0 TEST RESULT SUMMARY

Client: We Energies
Facility: Presque Isle Power Plant
Test Location: Flue 5 Stack
Test Method: 5

Source Condition	Sootblowing	Normal	Normal	
Date	6/25/15	6/25/15	6/25/15	
Start Time	10:20	12:18	14:33	
End Time	11:32	13:24	15:03	
	Run 1	Run 3	Run 4	Average
Stack Conditions				
Average Gas Temperature, °F	327.1	325.2	323.4	325.2
Flue Gas Moisture, percent by volume	13.1%	11.2%	11.2%	11.8%
Average Flue Pressure, in. Hg	29.86	29.86	29.86	29.86
Gas Sample Volume, dscf	46.172	45.784	48.039	46.665
Average Gas Velocity, ft/sec	63.955	62.251	63.351	63.186
Gas Volumetric Flow Rate, acfm	244,117	237,615	241,813	241,182
Gas Volumetric Flow Rate, dscfm	141,991	141,578	144,381	142,650
Gas Volumetric Flow Rate, scfm	163,413	159,449	162,628	161,830
Average $\%CO_2$ by volume, dry basis	13.3	13.0	13.0	13.1
Average $\%O_2$ by volume, dry basis	5.5	6.0	6.0	5.8
Isokinetic Variance	98.8	98.3	102.7	99.9
Fd Factor, dscf/mmBtu	9,820.0	9,820.0	9,820.0	9,820.0
Particulate Matter (Method 5)				
grams collected	0.0062	0.0056	0.0033	0.0050
mg/dscm	4.742	4.320	2.426	3.8292
grains/acf	0.0012	0.0011	0.0006	0.0010
grains/dscf	0.0021	0.0019	0.0011	0.0017
lb/hr	2.522	2.290	1.312	2.041
lb/mmBtu (Standard Fd Factor)	0.0039	0.0037	0.0021	0.0032
lbs/1000 lbs wet	0.00346	0.00320	0.00180	0.00282
lbs/1000 lbs dry	0.00377	0.00344	0.00193	0.00305
lbs/1000 lbs wet at 50% excess air	0.00377	0.00344	0.00193	0.00305
lbs/1000 lbs dry at 50% excess air	0.00411	0.00370	0.00208	0.00330

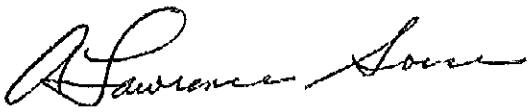
4.0 CERTIFICATION

MOSTARDI PLATT is pleased to have been of service to We Energies. If you have any questions regarding this test report, please do not hesitate to contact us at 630-993-2100.

CERTIFICATION

As project manager, I hereby certify that this test report represents a true and accurate summary of emissions test results and the methodologies employed to obtain those results, and the test program was performed in accordance with the methods specified in this test report.

MOSTARDI PLATT



Larry Sorce — Program Manager

Scott W. Banach — Quality Assurance