



**Mercury and Air Toxics Standards
Particulate Matter and Hydrogen Chloride
Emissions Test Report**

**We Energies
Presque Isle Power Plant
TOXCON Outlet Duct
Marquette, Michigan
November 8 through 10, 2016**

**Report Submittal Date
January 5, 2017**

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Mostardi Platt

Project No. M164503A



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

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**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 2701 N. Lakeshore Blvd. City Marquette

AQD Source ID (SRN) B4261 ROP No. MI-ROP-B4261-2013b ROP Section No. NA

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 11/8/2016 To 11/10/2016

Additional monitoring reports or other applicable documents required by the ROP are attached as described:
4Q MATS PM and HCL Emissions Test Report TOXECON Outlet Duct

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

<u>Leslie D. Kowalski</u>	<u>Asset Manager - PIPP</u>	<u>906-226-5757</u>
Name of Responsible Official (print or type)	Title	Phone Number

<u>Leslie D. Kowalski</u>	<u>01/06/2017</u>
Signature of Responsible Official	Date

* Photocopy this form as needed.

1.0 EXECUTIVE SUMMARY

MOSTARDI PLATT conducted a Mercury and Air Toxics Standards (MATS) Particulate Matter and Hydrogen Chloride emissions test program for the We Energies at the Presque Isle Power Plant on the TOXECON Outlet Duct in Marquette, Michigan on November 8 through 10, 2016. This report summarizes the results of the test program and test methods used.

The test location, test dates, and test parameters are summarized below.

TEST INFORMATION		
Test Location	Test Dates	Test Parameters
TOXECON Outlet Duct	November 8-10, 2016	Filterable Particulate Matter (FPM) and Hydrogen Chloride (HCl)

The purpose of the test program was to document the FPM and HCl emissions to qualify for the LEE designation as required by 40 CFR Part 63, Subpart UUUUU. 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 Parameter	Emission Limit	Emission Rate
TOXECON Outlet Duct	FPM	≤0.030 lb/mmBtu	0.0052 lb/mmBtu
	HCl	≤0.002 lb/mmBtu	0.0006 lb/mmBtu

Emissions on lb/mmBtu basis were determined using a standard F_d -Factor of 9,820 dscf/mmBtu for sub-bituminous coal. The HCl emission test procedures followed the MATS sampling requirements and the emissions meet the LEE demonstration criteria of 0.001 lb/mmBtu which is 50% of the limit. Plant operating data as provided by We Energies is included in Appendix A.

The Stationary Source Audit Sample Program audit sample was obtained from ERA and submitted for analysis to Maxxam Analytical. The results of the audit sample was compared to the assigned value by ERA and found to be acceptable. The audit sample result and evaluation are appended to this report.

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

TEST PERSONNEL INFORMATION		
Location	Address	Contact
Test Coordinator	We Energies 333 West Everett Street Environmental Department A231 Milwaukee, Wisconsin 53203	Mr. Rob Bregger (414) 221-2772 (phone) rob.bregger@we-energies.com
Test Facility	We Energies Presque Isle Power Plant 2701 Lakeshore Boulevard, North Marquette, Michigan 49885	Ms. Brenda Bergemann (414) 221-2453 (phone) brenda.bergemann@we-energies.com
Testing Company Representative	Mostardi Platt 888 Industrial Drive Elmhurst, Illinois 60126	Mr. Timothy E. Russ Project Manager (630) 993-2100 (phone) truss@mp-mail.com

The test crew consisted of Messrs. J. Aksamitowski, K. Johnson, N. Colangelo, S. Cronin, and T. Russ of Mostardi Platt.

2.0 TEST METHODOLOGY

Emissions testing was conducted following the methods specified in 40CFR60, Appendix A. A schematic of the test section diagram is found in Appendix B and schematics of the sampling trains used are included in Appendix C. Calculation nomenclature and sample calculations are included in Appendix D. Laboratory analysis data are found in Appendix E. Copies of analyzer print-outs for each test run are included in Appendix F and field data sheets are found in Appendix G.

The following methodologies were used during the test program:

Method 1 Traverse Point 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
TOXECON Outlet Duct	>0.5	>2.0	FPM	30
TOXECON Outlet Duct	>0.5	>2.0	HCl	1

Method 2 Volumetric Flowrate Determination

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

Method 3A Oxygen (O₂)/Carbon Dioxide (CO₂) Determination

Stack gas molecular weight was determined in accordance with Method 3A. An ECOM analyzer was used to determine stack gas oxygen and carbon dioxide content and, by difference, nitrogen content. 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 Filterable Particulate Matter (FPM) Determination

Stack gas FPM concentrations and emission rates were determined in accordance with USEPA Method 5, 40CFR60, Appendix A. An Environmental Supply Company, Inc. sampling train was used to sample stack gas at an isokinetic rate, as specified in the Method. Filter and probe temperatures were elevated to 320° Fahrenheit as described in 40CFR63, Subpart UUUUU. 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. Sample analysis 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.

Modified Method 26 Hydrogen Chloride (HCl) Determination

Stack gas hydrogen chloride concentrations and emission rates were determined in accordance with a modified Method 26. An Environmental Supply Company sampling train was used to sample stack gas, in the manner specified in the Method at one sample point modified to use large impingers as allowed for per 40 CFR Part 63, Subpart UUUUU. Analyses of the samples collected were conducted by Maxxam Analytics of Mississauga, Ontario. Laboratory analysis data are found in Appendix F. 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: TOXECON Outlet Duct
Test Method: 5 MATS

	Source Condition	Normal	Normal	Normal	
	Date	11/10/16	11/10/16	11/10/16	
	Start Time	14:13	15:55	17:40	
	End Time	15:23	17:05	18:50	
	Run 1	Run 2	Run 3	Average	
Stack Conditions					
Average Gas Temperature, °F	330.5	335.3	340.1	335.3	
Flue Gas Moisture, percent by volume	11.4%	10.9%	10.9%	11.1%	
Average Flue Pressure, in. Hg	29.07	29.07	29.07	29.07	
Gas Sample Volume, dscf	50.178	52.457	53.553	52.063	
Average Gas Velocity, ft/sec	39.162	41.561	41.367	40.697	
Gas Volumetric Flow Rate, acfm	791,882	840,377	836,455	822,905	
Gas Volumetric Flow Rate, dscfm	455,280	483,079	477,990	472,116	
Gas Volumetric Flow Rate, scfm	513,828	542,026	536,215	530,690	
Average %CO ₂ by volume, dry basis	12.9	12.8	12.9	12.9	
Average %O ₂ by volume, dry basis	6.0	6.2	6.1	6.1	
Isokinetic Variance	103.0	101.5	104.7	103.1	
Standard Fuel Factor Fd, dscf/mmBtu	9,820.0	9,820.0	9,820.0	9,820.0	
Filterable Particulate Matter (Method 5 MATS)					
grams collected	0.0178	0.0039	0.0044	0.0087	
mg/dscm	12.527	2.626	2.902	6.0182	
grains/acf	0.0031	0.0007	0.0007	0.0015	
grains/dscf	0.0055	0.0011	0.0013	0.0026	
lb/hr	21.360	4.750	5.194	10.435	
lb/mmBtu (Standard Fd Factor)	0.0108	0.0023	0.0025	0.0052	

Client: We Energies
Facility: Preque Isle Power Plant
Test Location: TOXECON Outlet Duct
Test Method: Modified Method 26

	Source Condition	Normal Full Load			Average
	Date	11/8/16	11/8/16	11/9/16	
	Start Time	10:55	12:35	8:55	
	End Time	12:25	14:05	10:25	
		Run 1	Run 2	Run 3	
Stack Conditions					
Average Gas Temperature, °F		342.8	343.2	339.4	341.8
Flue Gas Moisture, percent by volume		11.3%	11.4%	11.3%	11.3%
Average Flue Pressure, in. Hg		29.38	29.38	29.57	29.44
Gas Sample Volume, dscf		68.874	69.081	70.135	69.363
Average Gas Velocity, ft/sec		40.048	40.071	40.474	40.198
Gas Volumetric Flow Rate, acfm		809,792	810,258	818,410	812,820
Gas Volumetric Flow Rate, dscfm		463,940	463,396	473,987	467,108
Gas Volumetric Flow Rate, scfm		522,889	522,984	534,148	526,674
Average %CO ₂ by volume, dry basis		13.5	13.4	12.9	13.3
Average %O ₂ by volume, dry basis		5.9	6.1	6.6	6.2
Isokinetic Variance		91.4	91.8	91.1	91.4
Standard Fuel Factor Fd, dscf/mmBtu		9,820.0	9,820.0	9,820.0	9,820.0
Hydrogen Chloride (HCl) Emissions					
ug of sample collected		1300.00	1300.00	1300.00	1300.00
ppm		0.44	0.44	0.43	0.44
mg/dscm		0.67	0.66	0.65	0.66
lb/hr		1.158	1.154	1.162	1.158
lb/mmBtu (Standard Fd Factor)		0.0006	0.0006	0.0006	0.0006

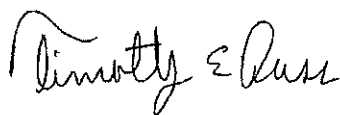
4.0 CERTIFICATION

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



Program Manager

Timothy E. Russ



Quality Assurance

Scott W. Banach