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June 8, 2018

Todd Zynda, Environmental Engineer  
Michigan Department of Environmental Quality  
Air Quality Division  
3058 W. Grand Boulevard, Suite 2-300  
Detroit, MI 48202-6058

**RE: M4148 Detroit Renewable Power – Response to Violation Notices dated February 26 and April 11, 2018**

Dear Mr. Zynda:

This correspondence is Detroit Renewable Power’s (DRP) response to the Violation Notices (VNs) dated February 26 and April 11, 2018 regarding excess emissions as reported in DRP’s 2017 third and fourth quarter Continuous Emissions Monitoring Systems (CEMS) Reports, associated CEMS data, and Rule 912 notification to the Michigan Department of Environmental Quality, Air Quality Division (AQD).

The following table summarizes the items discussed in the VNs along with DRP’s response to each event. Explanation of the causes and duration of any reported excess emissions, as well as a summary of corrective actions implemented, is provided after the table.

Note that although DRP initially reported each of the events alleged in the AQD February 26, 2018 and April 11, 2018 VNs, further review of the data confirms that a number of the cited events (e.g., 8/20/17, 9/12/17, 12/10/17, and 12/31/17) actually occurred during periods of startup, shutdown, or malfunctions and are, therefore, not reportable exceedances, as noted in the DRP Response column.

Process Description	Rule/Permit Condition	Summary of AQD Comments	DRP Response
Boiler 11 - 3Q2017	FGBOILERS011-013 SC I.11.b	CO emissions - exceeded 267 ppmv 1-hr block 8.20.2017 (17:00-19:00) 316 ppmv and 284 ppmv	Malfunction of the RDF feed occurred. DRP implemented appropriate and timely corrective action. Therefore, no violation occurred.

Process Description	Rule/Permit Condition	Summary of AQD Comments	DRP Response
Boiler 11 - 3Q2017	FGBOILERS011-013 SC I.13.a	NOx emissions - exceeded 247 ppmv 1-hr block 9.12.2017 (6:00-7:00) 248 ppmv and 9.29.2017 (0:00-1:00) 249 ppmv	9.12.2017 – DRP took necessary corrective actions to minimize CO emissions, which resulted in an increase in NOx emissions above 247 ppmv for approximately 28 minutes of the hour.  9.29.2017 –DRP took necessary corrective actions to minimize CO emissions, which resulted in an increase in NOx emissions above 247 ppmv for approximately 36 minutes of the hour.
Boiler 11 - 4Q2017	FGBOILERS011-013 SC I.13.a	NOx emissions - exceeded 247 ppmv 1-hr block 10.12.2017 (9:00-10:00 – 248 ppmv) and 12.10.2017 (16:00-17:00 – 255 ppmv	10.12.2017 – The NOx concentrations was 1 ppmv or 0.4% over the limit for one hour.  12.10.2017. Shutdown. RDF ceased continuous flow to Boiler 11 at 16:12.
Boiler 11 - 4Q2017	FGBOILERS011-013 SC I.9.a 60.33b(b)(1) 62.14103(b)(1) ACO AQD No. 6-2017 P13	SO2 emissions - exceeded 29 ppmv 24-hr daily geometric mean 12.31.2017 66 ppmv	Only 9 hours was available for 12.31.2017; therefore, a full 24-hour period was not available to calculate the 24-hour daily geometric mean.  Unit was down from 12.25.2017 13:00 until startup of 12.31.2017. RDF started flow at 14:47 on 12.31.2017. Lime slurry supply line plugged, routed slurry from adjacent SDA but unable to establish required flow amount to reduce SO2. The SO2 concentration decreased to 3 ppmv once slurry was established 1.1.2018 at 8:00 resulting in a subsequent 8 ppmv SO2 geometric mean.

Process Description	Rule/Permit Condition	Summary of AQD Comments	DRP Response
Boiler 13 - 4Q2017	FGBOILERS011-013 SC I.11.b	CO emissions - exceeded 267 ppmv 1-hr block 12.29.2017 (20:00 to 22:00) 349 and 268 ppmv	DRP did implement appropriate and timely corrective action to minimize emissions by addition of fuel oil at 20:14 during a process upset event of the soot blowers operations that caused higher CO emissions.
Boiler 13 - 4Q2017	FGBOILERS011-013 SC I.11.a 60.34b(a), Table 3 ACO AQD No. 6-2017 P13	CO emissions - exceeded 200 ppmv 24-hr block 12.29.2017 204 ppmv	DRP did implement appropriate and timely corrective action to minimize emissions by addition of fuel oil at 20:14 during a process upset event of the soot blowers operations that caused higher CO emissions.
Boiler 13 - 4Q2017	FGBOILERS011-013 SC I.13.a	NOx emissions - exceeded 247 ppmv 1-hr block 10.9.2017 (19:00 to 20:00) 249 ppmv	DRP took the necessary corrective actions to minimize CO emissions, which resulted in the NOx concentration increasing to 2 ppmv above the limit or 0.81% of the limit.
FGBOILERS	FGBOILERS011-013 SC VII.5 Part 60 Subpart A	Failure to report all excess emissions for 3 <sup>rd</sup> and 4 <sup>th</sup> Quarter 2017	All excess emissions were reported in the 3 <sup>rd</sup> and 4 <sup>th</sup> Quarter 2017 reports and subsequent addenda requested by MDEQ; however because this information was submitted in several installments, DRP will compile and resubmit the 3 <sup>rd</sup> and 4 <sup>th</sup> Quarter 2017 EERs by June 15, 2018.
Boiler 12 – Rule 912 Notification	FGBOILERS011-013 SC I.11.b ACO No. 6-2017 Paragraph 13	CO emissions – exceeded 267 ppmv for five consecutive hours 1.20.2018	Malfunction event. DRP met Rule 912 notification requirements and implemented appropriate and timely corrective action. Therefore, no violation occurred.

The following summarizes the cause and corrective action of each of the events listed in the above table. The supporting data for each of the events listed below is included as attachments to this letter. No reported excess emissions are ongoing.

**August 20, 2017 17:00-19:00 Boiler 11 CO**

DRP did implement appropriate and timely corrective action by addition of fuel oil at 17:02 during a process upset event of the formation of clinkers. As noted in the submitted 3Q2017 Excess Emissions Report, a buildup of large clinker occurred in bays 3 and 4 on August 20. This abnormal condition affected the combustion efficiency of Boiler 11. Within two minutes of the CEMS-provided indication of increasing CO emissions (17:02), DRP implemented appropriate corrective action by reducing the injection of RDF while simultaneously injecting fuel oil to the boiler. Fuel oil was fed, as needed throughout the two-hour period, to minimize CO emissions while DRP performed necessary maintenance to de-clinker the unit.

Note that these corrective actions helped minimize the level of CO emissions during the two-hour period. For example, CO emissions were less than 267 ppm for 65% (39 minutes) of the 17:00 hour. During that 39 minute period, CO emissions averaged 94 ppmv, which is significantly below the 267 ppmv limit. The corrective action also served to limit the duration of higher CO emissions to that two hour period. Therefore, the facility should be considered in compliance during this time period.

**September 12, 2017 6:00-7:00 – Boiler 11 NO<sub>x</sub>**

As noted in the 3Q2017 report submitted to AQD, DRP was managing high CO emissions with additional combustion air and fuel oil supplemental fuel, which is the appropriate corrective action to minimize CO emissions. These corrective actions resulted in additional formation of NO<sub>x</sub>. DRP then took corrective actions of reduction of RDF feed from 85 down to 44 during hour 6:00 operations as well as adjusted air dampers, adjusted grate speed, over-fire air and under-grate air to minimize the NO<sub>x</sub> emissions. This resulted in the subsequent hours NO<sub>x</sub> emissions to drop to 237 ppmv and falling, thereafter to 233 ppmv.

**September 29, 2017 0:00-1:00 – Boiler 11 NO<sub>x</sub>**

Similar to the September 12, 2017 event, on September 29 DRP was managing high CO emissions with additional combustion air that resulted in additional formation of NO<sub>x</sub>. Again, DRP took the corrective actions of reduction of RDF feed and adjusted grate and auger speeds, adjusted over-fire air and under-grate air. This resulted in the subsequent hour NO<sub>x</sub> emissions to drop to 234 ppmv. The NO<sub>x</sub> concentration was 2 ppmv or 0.81% of the limit. The average value of NO<sub>x</sub> from startup September 28 13:00 was 233 ppmv with a highest value during this period of 239 ppmv. The average NO<sub>x</sub> concentration was 232 ppmv for the 24-hour period from startup on Sept 28 13:00 to Sept 29 13:00. This demonstrates that the unit was typically operating below the emission limit of 247 ppmv.

**October 12, 2017 9:00-10:00 – Boiler 11 NO<sub>x</sub>**

As noted in the above table DRP response column and the addendum to the 4Q2017 notification to AQD, DRP was experiencing process upsets of the feed line to boilers had a mummy wrap blocking normal RDF flow. The operators attempted to implement the corrective actions of starting fuel oil, however, the fuel oil guns tripped due to loss of plant air. DRP performed timely corrective actions according to the SSM plan, which effectively reduced the NO<sub>x</sub> emissions to 229 ppmv for October 12, 2017.

**December 10, 2017 16:00-17:00 – Boiler 11 NO<sub>x</sub>**



As noted in the attached minute data for Boiler 11, RDF ceased flow at 16:12. Therefore, this event occurred during a shutdown event and is covered under the startup and shutdown provisions and are not considered violations.

**December 31, 2017 – Boiler 11 SO<sub>2</sub> 24-hour**

The 12.31.2017 alleged SO<sub>2</sub> excess emissions occurred during startup, resulting in only 6 hours of operation and 3 hours of startup on that day. Therefore, these three events are covered under the startup and shutdown provisions and are not violations.

**December 29, 2017 20:00-22:00 – Boiler 13 CO**

DRP did implement appropriate and timely corrective action by addition of fuel oil at 20:14 during a process upset event of the soot blowers operations causing higher CO emissions. The appropriate corrective action of the addition of fuel oil at 20:14 and corresponding reduction of RDF is considered timely. As presented in the attached minute data, Boiler 13 experienced a couple minutes with exceptional high CO concentrations, which resulted in a skewed CO average emission rate. Averaging the CO emission rate for the remaining of the hour minutes results in a CO concentration of 166 ppmv. The actions taken by DRP were considered timely and according to the SSM plan. Therefore, these events are covered under the startup and shutdown provisions and are not considered violations.

**December 29, 2017 – Boiler 13 CO 24-hour**

As noted in the Boiler 13 20:00-22:00 1-hour CO excursion, the boiler was experiencing process upset conditions that DRP took the necessary corrective actions timely. However, the couple of hours for the 24-hour period resulted in the 24-hour block average to exceed the 200 ppmv limit by 4 ppmv. The remainder 22 hours CO emissions results in an average of 196 ppmv, which is below the emission limit of 200 ppmv. Therefore, this event is covered under the startup and shutdown provisions and not considered a violation.

**October 9, 2017 19:00-20:00 – Boiler 13 NO<sub>x</sub>**

Similar to the September 12, 2017 event for Boiler 11, DRP took the corrective actions of reduction of RDF feed and adjusted grate and auger speeds, adjusted over-fire air and under-grate air. This resulted in the subsequent hour NO<sub>x</sub> emissions to drop to 243 ppmv. The NO<sub>x</sub> concentration was 2 ppmv or 0.81% of the limit. The average NO<sub>x</sub> concentration was 223 ppmv for the 24-hour period of October 9, 2017, significantly below the 247 ppmv limit. This demonstrates that the unit was typically operating below the emission limit of 247 ppmv.

**Excess Emission Reporting – ROP No. MI-ROP-M4148-2011a. FGBOILERS011-013 SC VII.5**

Subsequent to the submittal of the third and fourth quarterly reports, AQD requested the hourly data for these quarters. Based on their review, they identified additional excess emissions that they believed not to be reported in the quarterly reports. DRP requests AQD to re-evaluate the third and fourth quarterly reports and addendums submitted to verify the excess emission reported by DRP. Based on DRP's review, all of the excess emissions required were included in the excess emission report and its subsequent addendums. However, DRP acknowledges the information submittal was fragmented and appreciate the challenge in reviewing the files. Therefore, DRP will compile the excess emission data into a consolidated document for AQD

review. The revised excess emission file will be submitted with the Renewable Operating Permit semi-annual certification on June 15, 2018.

**January 30, 2018 – Boiler 12 – Rule 912 Notification**

The attached e-mail confirms that DRP submitted a Rule 912 notification for Boiler 12 on February 1, 2018, which is within the 2-business day notification requirement. The notification also addressed the Rule 912(5) written report elements. Attached is a copy of the Rule 912 notification. Therefore, DRP provided timely and appropriate notification according to Rule 912 and is not in violation of Rule 912. In addition, the prior notifications adequately explained the circumstances and demonstrated that a malfunction had occurred and was appropriately and timely corrected. Therefore, no emission violation occurred.

The following table provides responses to each of the events listed in the VN tables 1 and 2.

**DRP Response to VN Table 1 – Third Quarter 2017 Excess Emissions**

Date	Time Start	End Time	Boiler	Pollutant	ppmv	AQD Notes	DRP Response
7/19/2017	14:00	15:00	11	CO	273	Startup	Boiler Down.
7/28/2017	10:00	11:00	11	CO	443	Startup	Startup. RDF in the unit at 10:48.
7/28/2017	13:00	14:00	11	CO	287		Startup. RDF in the unit at 10:48 so still in startup period until 13:48.
8/1/2017	3:00	4:00	11	CO	347		Malfunction. Approximately 11 minutes of excess CO emissions occurred during this hour due to a process upset. DRP took appropriate timely corrective actions.
8/22/2017	12:00	13:00	11	CO	301		Malfunction. DRP took appropriate timely corrective actions.
8/24/2017	15:00	16:00	11	CO	314		Shutdown. RDF stops continuous feed at 15:33.
9/11/2017	3:00	4:00	11	CO	280		Malfunction. DRP took appropriate timely corrective actions.
9/11/2017	10:00	11:00	11	CO	272		Malfunction. DRP took appropriate timely corrective actions.
9/11/2017	14:00	15:00	11	CO	279		Malfunction. DRP took appropriate timely corrective actions.
7/7/2017	2:00	3:00	12	CO	308	Startup	Startup. RDF in the unit at 2:53
8/25/2017	14:00	15:00	12	CO	418	Startup	Startup. RDF in the unit at 14:47.

Date	Time Start	End Time	Boiler	Pollutant	ppmv	AQD Notes	DRP Response
8/30/2017	15:00	16:00	12	CO	284		Note this should be hour 16:00 to 17:00, not 15:00 to 16:00 as referenced in MDEQ letter. DRP did implement appropriate and timely corrective action by addition of fuel oil at 20:14 during a process upset event of the soot blowers operations that caused higher CO emissions.
9/15/2017	6:00	7:00	12	CO	280		Malfunction. DRP took appropriate timely corrective actions.
9/18/2017	1:00	2:00	12	CO	327	Shutdown	Shutdown.
9/18/2017	2:00	3:00	12	CO	273	Shutdown	Shutdown.
9/18/2017	3:00	4:00	12	CO	856	Shutdown	Shutdown.
9/23/2017	13:00	14:00	12	CO	1107	Startup	Startup. RDF in unit at 13:57.
9/25/2017	2:00	3:00	12	CO	301		Shutdown. RDF stops continuous feed between 1:46.
9/29/2017	21:00	22:00	12	CO	294		Duplicate citing.
7/13/2017	3:00	4:00	13	CO	1042	Startup	Startup. RDF in unit at 3:54.



**Response to Table 1 CO Excess Emissions**

For the dates of August 1, August 22, September 11, and September 15, 2017, DRP appropriately implemented timely corrective action by addition of fuel oil during process upset events. As noted in the report submittal to AQD and as provided in the attachments to this response letter, the appropriate corrective action of the addition of fuel oil and corresponding reduction of RDF, which is considered timely. Therefore, the facility should be considered in compliance during this time period.

**DRP Response to VN Table 2 – Fourth Quarter 2017 Excess Emissions**

Date	Time Start	End Time	Boiler	Pollutant	ppmv	AQD Notes	DRP Response
10/7/2017	2:00	3:00	11	CO	871	Startup	Startup. No additional comment.
11/3/2017	9:00	10:00	11	CO	313	Startup?	Startup. RDF in unit at 9:35.
11/7/2017	16:00	17:00	11	CO	596	Startup	Startup. RDF in unit at 16:50.
11/7/2017	20:00	21:00	11	CO	431		Startup. RDF in unit at 20:53.
11/20/2017	16:00	17:00	11	CO	310	Startup	Startup. RDF in unit at 16:50.
12/1/2017	11:00	12:00	11	CO	356	Startup	Startup. RDF in unit at 11:58.
12/5/2017	13:00	14:00	11	CO	353	Startup	Boiler Down and Invalid Data
12/7/2017	11:00	12:00	11	CO	1043	Startup	Startup. RDF in unit at 11:47.
12/8/2017	10:00	11:00	11	CO	626		Startup. RDF feed only between 10:31 and 10:45
12/11/2017	1:00	2:00	11	CO	292		Malfunction. DRP took appropriate timely corrective actions.
12/11/2017	8:00	9:00	11	CO	277		Malfunction. DRP took appropriate timely corrective actions.
12/14/2017	8:00	9:00	11	CO	1009	Startup	Startup. RDF in unit at 8:50.
12/19/2017	13:00	14:00	11	CO	284		Startup RDF in unit at 13:24.
12/31/2017	14:00	15:00	11	CO	574	Startup	Startup. RDF in unit at 14:47.
12/31/2017	14:00	23:59	11	SO2	66	24-hour Geometric Mean	Duplicate Citing. Note this is SO2 not CO as listed in MDEQ letter.
11/28/2017	22:00	23:00	12	CO	584	Startup	Startup. RDF in unit at 22:58.
12/27/2017	19:00	20:00	12	CO	281		Malfunction. DRP took appropriate timely corrective actions.
12/29/2017	4:00	5:00	12	CO	281		Malfunction. DRP took appropriate timely corrective actions.
10/8/2017	15:00	16:00	13	CO	461	Startup	Startup. RDF in unit at 15:58.

Date	Time Start	End Time	Boiler	Pollutant	ppmv	AQD Notes	DRP Response
10/9/2017	19:00	20:00	13	NOx	249		Duplicate citing.
10/17/2017	14:00	15:00	13	NOx	253	Shutdown	Shutdown. RDF stops continuous feed at 14:17.
12/5/2017	13:00	14:00	13	CO	419	Startup	Boiler Down and Invalid Data
12/27/2018	3:00	7:00	13	SO2	51	24-hour Geometric Mean - Startup/Shutdown	Startup. Boiler operated only 4 hours 12.27.2017.
12/29/2017	0:00	23:59	13	CO	204	24-hour Block Average	Duplicate Citing.

**Response to Table 2 CO Excess Emissions**

For the dates of December 11, 27 and 29, 2017, DRP appropriately implemented timely corrective action by addition of fuel oil during process upset events. As noted in the report submittal to AQD and as provided in the attachments to this response letter, the appropriate corrective action of the addition of fuel oil and corresponding reduction of RDF, which is considered timely. Therefore, the facility should be considered in compliance during this time period.

**Response to Table 2 NOx Excess Emissions**

On October 17, 2017, Boiler 13 shutdown at 14:17. Therefore, this event occurred during a shutdown event and is covered under the startup and shutdown provisions and are not considered violations.


**Response to Table 2 SO2 Excess Emissions**

The 12.27.2017 alleged SO2 excess emissions occurred during the startup, resulting in only 4 hours of operation and the remaining time Boiler 13 was down. Therefore, these four events is covered under the startup and shutdown provisions and are not considered violations.

If you have questions concerning this response, please feel free to contact Damian Doerfer at (313) 963-3394.

Sincerely,

Detroit Renewable Power



Damian Doerfer, EHS Manager

CC: Robert Suida, DRP Plant Manager  
Erin Barry, DCO Environmental Manager

Attachments