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**Jim Earl**

Environmental Affairs Manager  
Dearborn Works

November 17, 2014

Mr. Jonathan Lamb  
Senior Environmental Quality Analyst  
Michigan Department of Environmental Quality  
Air Quality Division  
3058 West Grand Boulevard  
Suite 2-300  
Detroit, Michigan 48202-6058

Subject: Response to Violation Notice  
AK Steel Dearborn Facility  
4001 Miller Road  
Dearborn, Michigan 48120-1699  
SRN: A8640, Wayne County

Dear Mr. Lamb:



AK Steel Dearborn Works (AK Steel) provides this response letter to address the alleged violations identified in MDEQ's violation notice dated October 27, 2014. The alleged violations are based on MDEQ's review of the semi-annual (January-July) Title V deviation report that the facility submitted on September 12, 2014. Our responses to the alleged violations are provided below:

***#1: Basic Oxygen Furnace (BOF) Electrostatic Precipitator (ESP) – COMS data indicated 28 six-minute average periods that exceeded 20% opacity that were not attributable to steam interference during the reporting period January – June 2014.***

AK Steel is aware of some of the prior discussion between Severstal and MDEQ regarding the government's assertion that use of the BOF ESP COMS is necessary for determining compliance with the state 6-minute average opacity standard. However, AK Steel disagrees that a 6-minute average as measured by the COMS that exceeds 20% is considered a violation of that state standard.

The BOF ESP stack is subject to two independent, separate opacity limits. The first opacity limit is the state standard, which subjects a source to a "6-minute average of 20% opacity, except for one 6-minute average per hour of not more than 27% opacity." R 336.1301(1). The regulations go on to state that "the opacity of a visible emission shall be determined by a qualified observer and shall be certified in accordance with, and using the procedures specified in, reference method 9 or an alternative method approved by the department." R 336.1303. Neither Severstal nor AK Steel has sought approval from MDEQ for an alternative method, therefore the regulations dictate that compliance is based on reference method 9, not any other means such as a COMS. AK Steel is required to conduct Method 9 visible emissions readings of the BOF ESP stack for two hours per week (per the ROP) and for a minimum of one complete heat (per PTI 182-05C).

The second opacity limit is from the NESHAP for Integrated Iron and Steel Manufacturing Facilities, which subjects a source to an “hourly average of opacity of emissions exiting the control device at or below 10 percent.” 40 C.F.R. § 7790(b)(3). This hourly limit is a trigger for investigation and corrective actions and is not considered a deviation unless corrective actions are not successful after 48 hours (40 C.F.R. § 63.7833(g)(4)). The regulations also provide that the source must install, operate and maintain a COMS to monitor the hourly average opacity of emissions. 40 C.F.R. § 63.7830(d). The COMS is required to complete one cycle of data recording for every 15-second period and for each 6-minute period, and the data must be reduced to 6-minute averages, however this is simply to create the “building blocks” of data for the hourly average. The NESHAP does not require maintaining or assessing 6-minute averages for compliance with a state standard or for any other purposes.

AK Steel is aware of MDEQ’s previously identified concerns about how the company could certify compliance with the state 20% 6-minute average opacity standard when the COMS data could provide evidence of noncompliance. However, in AK Steel’s opinion, given the difference in stringency between a standard based on periodic Method 9 observations, and a standard based on continuous COMS readings, any such COMS data is not “credible” evidence as it relates to the state Method 9 standard. And, a court has recently reached a conclusion on exactly that issue.

In a decision dated January 14, 2014, the District Court for the Northern District of West Virginia held that use of COMS data in place of Method 9 data for assessing an opacity standard is improper and beyond the scope of the credible evidence rule. *United States v. Mountain State Carbon, LLC*, No. 5:12-CV-19, (N.D. W.Va. Jan. 14, 2014). In that case, U.S. EPA alleged that emissions from Mountain State Carbon’s (MSC) coke battery combustion stack were in noncompliance with the state-based opacity standard based on COMS data, even though the state-based opacity limit required the use of Method 9 to determine compliance. In its Motion for Summary Judgment, U.S. EPA referenced the credible evidence provision included in West Virginia’s regulation, which is based on the federal credible evidence regulation but qualifies its use to only those circumstances where compliance determination procedures have not been adopted. U.S. EPA also referenced the credible evidence term in MSC’s Title V permit. U.S. EPA concluded that these provisions allowed the use of COMS data to assess noncompliance with the opacity standard.

The court, however, disagreed. The Court cited to West Virginia’s credible evidence regulation, which only allows credible evidence in circumstances where a requirement does not contain a definitive compliance determination. The Court also cited to MSC’s Title V permit provision expressly requiring Method 9 to assess compliance. The court concluded that use of COMS was more stringent than use of Method 9 due to the continuous nature of the COMS, which is in conflict with U.S. EPA’s preamble statements that the credible evidence rule was not intended to make limits more stringent. Specifically, the court concluded that “using COMS as ‘credible evidence,’ therefore, would affect the stringency of underlying emission standards by amending the nature of the compliance obligation.”

This conclusion is further relevant as it relates to the BOF ESP, due to the fact that there is regularly steam interference with the COMS readings that can have a dramatic impact on short-term averages such as 6-minute averages. This is a central reason why U.S. EPA revised the NESHAP for Iron and Steel Manufacturing Facilities for BOF ESPs to an hourly average that is a trigger for corrective action, and not a short-term average.

Finally, note that AK Steel does use the COMS for assessment of overall ESP operation beyond just monitoring the hourly averages. But, there is a considerable difference between the proactive use of the COMS data for assessment purposes, and being held to a compliance demonstration method that can be unreliable for this operation due to steam interference, and overall is substantially more stringent than required by the regulations. Therefore, AK Steel will not be reporting 6 minute average opacity deviations based on COMS data in future Title V deviation reports.

Notwithstanding the fact that AK Steel does not consider these 6-minute averages as monitored by the COMS as noncompliance, the Company has nonetheless assessed them and a summary of these assessments are detailed in this response.

During the first half of 2014, twenty-three of the opacity events were attributed to power drops or other electrical issues (AVCs with low power levels, ID fan tripped). There were no Method 9 readings corresponding to the time periods and no basis to confirm that steam interference with the COMS did not occur. For some dates, review of video camera footage indicated that there was steam present that may have affected the COMS readings.

Three of the opacity events were reviewed and a root cause could not be determined. There were no Method 9 readings corresponding to the time periods and no basis to confirm that steam interference with the COMS did not occur. For the March 27<sup>th</sup> event, review of video camera footage indicated that there was some steam present that may have affected the COMS readings.

Two of the opacity events were reviewed and the root cause was determined to be an emergency shutdown of ESP ID Fan #4 due to excessive fan vibration. There were no Method 9 readings corresponding to the time periods of the events. The excessive fan vibration required ESP ID #4 Fan to be shut down immediately after finishing the oxygen blow, while transitioning to tapping on the A vessel. Following repairs, the ID #4 Fan was brought online, and the operations returned to normal. Should this situation occur again, AK Steel will allow more time following the oxygen blow prior to shutting down an ESP ID fan.

During the first half of 2014, the BOF ESP maintained a 6 minute average opacity 20% or under (with the one hour exception below 27% opacity) excluding confirmed steam interference, for 99.94% of the time. Furthermore, 100% of the Method 9 readings were in compliance during the first half of 2014.

***#2: BOF ESP – Failure to perform all required inspections and preventative maintenance on the ESP and associated capture system as prescribed in the Integrated Iron and Steel MACT during the reporting period January – June 2014.***

***#3: BOF ESP – Failure to properly maintain and operate the ESP and associated capture system based on failure to perform preventative maintenance and inspection at the frequencies required in the Integrated Iron and Steel MACT during the reporting period January – June 2014.***

***#4: BOF ESP – Failure to maintain records to demonstrate continuous compliance with the operation and maintenance requirements in the Integrated Iron and Steel MACT during the reporting period January – June 2014.***

Some inspections or preventative maintenance requirements identified in the revised September 3, 2013 BOF ESP O&M plan were deemed to be incomplete because the available inspection forms did not clearly document that several specific items were included as a part of the inspections that were performed. Maintenance has updated the inspection forms and now completely documents the requirements in the O&M plan so that they match the O&M plan wording. These first quarter 2014 deviations occurred during the roll-out and phased implementation of a new, enhanced O&M Plan that was developed at the request of the U.S. EPA and were not repeated during the second quarter of 2014.

***#5: Failure to perform all required inspections and preventative maintenance on the Secondary Baghouse and associated capture system as prescribed in the Integrated Iron and Steel MACT during the reporting period January – June 2014.***

***#6: Failure to maintain records to demonstrate continuous compliance with the operation and maintenance requirements in the Integrated Iron and Steel MACT during the reporting period January – June 2014.***

Some Secondary Baghouse inspections or preventative maintenance requirements identified in the revised September 12, 2013 BOF Secondary Emissions Baghouse O&M plan were deemed to be incomplete because the available inspection forms did not clearly document that several specific items were included as a part of the inspections that were performed. Maintenance has updated the inspection forms and now completely documents the requirements in the O&M plan so that they match the O&M plan wording. The scheduled inspection frequency for the hot metal hood was bi-weekly when it should have been established as weekly – the inspection frequency was changed to weekly for the week beginning on March 16, 2014. These first quarter 2014 deviations were not repeated during the second quarter of 2014.

Additionally, the bag leak detection alarms were visible to operators, but were not audible as required by the permit conditions specified at E-01.13.III.A.3.5(c) and E-01.14.III.A.3.5(c) which requires the alarms to be able to be heard by appropriate plant personnel. The bag leak detection system alarms on the Secondary Emission Baghouse and Desulf Baghouse were upgraded to provide an audible alarm on September 11, 2014

and October 16, 2014 respectively. The outputs and initial adjustments for this alarm are discussed within the MACT plan.

***#7: Failure to conduct a new performance test for the BOF Secondary Baghouse and C Blast Furnace Casthouse prior to changing capture system operating parameters since the initial performance test was conducted, as required by the Integrated Iron and Steel MACT.***

Specifically, in relation to 40 CFR 63.7824, at the C Blast Furnace Casthouse and the BOF Secondary Baghouse, specific operating parameters were not sufficiently documented during the initial MACT performance test, and operating parameters were changed since the initial performance test and a subsequent performance test was not conducted. Performance testing will be performed to satisfactorily address this issue and will establish the appropriate operating parameters. We have scheduled the performance testing to be conducted by the end of 2014. In addition, the BOF and C Blast Furnace Baghouse O&M plans have been updated.

#### **Additional Issues**

MDEQ requested that AK Steel provide updated MACT O&M plans for the BOF shop, including the ESP and Secondary Baghouse, and the C Blast Furnace with our response. The MACT O&M plans for the BOF shop, including the ESP and Secondary Baghouse have been reviewed by Steelmaking and Ironmaking operations and updated versions of the plans are enclosed.

MDEQ also noted the following actions are required prior to changing capture system operating limits set through the O&M plans for the C Blast Furnace Casthouse Baghouse and Secondary Baghouse, as stated in the Integrated Iron and Steel MACT (40 CFR Part 63, Subpart FFFFF), 40 CFR Part 63.7824(c):

" ... (1) Submit a written notification to the Administrator of your request to conduct a new performance test to revise the operating limit.

(2) Conduct a performance test to demonstrate compliance with the applicable emission limitation in Table 1 to this subpart.

(3) Establish revised operating limits according to the applicable procedures in paragraphs (a) and (b) of this section for a control device or capture system."

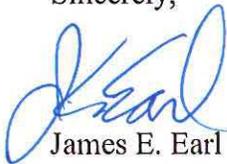
AK Steel understands the need for a performance test in order to revise the operating limits for the C Blast Furnace Casthouse Baghouse and Secondary Baghouse. Recent modifications to the O&M plans have not been the result of modifications to operating limits; rather plan modifications have been completed to revise incorrect data presented in the plans. In the past, the capture system designers and other capture experts evaluated the CPMS set points, initiated changes, and completed testing for control devices. The capture systems have been operating using set points proven through

testing. The facility had relied upon information supplied by the capture system designers, which contained a few errors (including a simple copy and paste error). After noting that the set points in the plan did not appear to be correct, the CPMS portion of the plans was updated. Operations personnel also worked with the system designers and examined the programming and the correct set points, which were in place during the most recent compliance testing in 2013 at both the C Blast Furnace and BOF.

Lastly, in an effort to improve overall environmental compliance, AK Steel has recently hired a full-time person to help manage and track air permit compliance and AK Steel continues to have embedded a number of environmental personnel from Civil & Environmental Consultants (CEC) in the operating areas to assist in meeting air permitting requirements. CEC's personnel are assisting AK Steel with creating procedures for air permit requirements and proactively verifying that inspections and other permit obligations are conducted in a timely manner.

If you have any questions regarding the provided information or require additional information, please contact me at 313-845-3217.

Sincerely,



James E. Earl  
Environmental Affairs Manager  
AK Steel Dearborn Works

Attachments: Updated MACT O&M Plans

- BOF ESP and Secondary Baghouse
- C Blast Furnace

cc: B. Bishop  
L. Combs  
T. Halls  
D. Miracle  
P. Gallo  
K. Kistler