



The Dow Chemical Company
Michigan Operations
Midland, MI 48674

October 1, 2019

RECEIVED

OCT 03 2019

AIR QUALITY DIVISION

CERTIFIED MAIL
7018 1830 0002 2087 4892

Tom Gaslioli
MI Dept. of EGLE
Air Quality Division
Constitution Hall
525 W. Allegan Street
Lansing, Michigan 48909-7973

cc: Jenine Camilleri
Enforcement Unit Supervisor
MI Dept. of EGLE
Air Quality Division
P. O. Box 30260
Lansing, MI 48909-7760

Chris Hare
District Supervisor
MI Dept. of EGLE
Air Quality Division
401 Ketchum Street, Suite B
Bay City, MI 48708

**RESPONSE TO DOW SILICONES CORPORATION VIOLATION NOTICE FOR
FG432BOILERS (BOILER NO. 13)**

Attached is a response to a violation notice dated August 19, 2019 for natural gas-fired boiler no. 13 of table FG432BOILERS in Renewable Operating Permit No. MI-ROP-A4043-2019 located at Dow Silicones Corporation in Midland, Michigan. If you have any questions regarding this response, please contact Jenny Kraut at 989-496-7133 or jennifer.kraut@dow.com.

Reiner Roghmann
Michigan Operations Site Leader
Vice President of Operations, Canada & USA North
1790 Building, Washington Street
Midland, MI 48674
(989) 638-8673

FG432BOILERS (Boiler No. 13)

Violation Notice Response

Introduction

On May 29 and 30, 2019, Dow Silicones (DSC) conducted a RATA (Relative Accuracy Test Audit) on the nitrogen oxide (NOx) and oxygen CEMS (continuous emission monitoring system) associated with boiler nos. 13 and 14. The RATA was conducted in accordance with the requirements of table FG432BOILERS of Renewable Operating Permit (ROP) No. MI-ROP-A4043-2019 and 40 CFR Part 60, Subpart Db. A RATA was previously performed on these boilers in March 2019. However, failing RATA results on the NOx CEMS for boiler nos. 13 and 14 prompted a re-test in May 2019. On July 26, 2019, DSC submitted the RATA results for boiler nos. 13 and 14 to the Michigan Department of Environment, Great Lakes and Energy (EGLE). The results indicated the NOx and oxygen CEMS passed for both boilers. However, subsequent review of the report by EGLE indicated failure for the NOx CEMS on boiler no. 13. As a result, in a letter dated August 19, 2019, EGLE cited DSC in violation of condition no. VI.2 of table FG432BOILERS in ROP No. MI-A4043-2019 for boiler no. 13 and requested a written response to the cited violation by September 9, 2019. A request to extend the response deadline to October 1, 2019 was submitted to EGLE on August 26, 2019 and was approved the same day. This document contains DSC's response to the cited violation.

Requested Information

Submit a written response to the cited violation. The written response should include: the dates the violations occurred; an explanation of the causes and duration of the violations; whether the violations are ongoing; a summary of the actions that have been taken and are proposed to be taken to correct the violations and the dates by which these actions will take place; and what steps are being taken to prevent a reoccurrence.

Dow Silicones Corporation Response:

Boiler no. 13 is a back-up boiler that is used on an as-needed basis to provide the site with steam. As a result, the boiler is started up daily for brief periods of time and shut down. In the infrequent event the boiler is needed for back-up, it runs for longer periods of time. Air permit requirements associated with boiler no. 13 are outlined in table FG432BOILERS and Appendix 3 of ROP No. MI-ROP-A4043-2019.

Appendix 3 of the ROP states, the CEMS shall be installed, calibrated, maintained and operated in accordance with the procedures set forth in 40 CFR 60.13 and Performance Specification 2 and 3 of Appendix B, 40 CFR Part 60. Performance specification 2, Section 13.3 requires that the relative accuracy of the CEMS must be no greater than 20% when using the reference method (relative accuracy (RA) method) or 10% of the applicable standard (alternative relative accuracy (ARA) method). In accordance with the requirements of the ROP, an annual RATA was conducted on boiler no. 13 on March 19, 2019 and again on May 29, 2019 due to failing results on the NOx CEMS. The reported RA and ARA in March for boiler no. 13 was 46% and 11%, respectively, indicating failing results. The reported RA and ARA in May was 39% and 8%, respectively, indicating passing results using the ARA method. However, upon review of May's test results by EGLE, it was discovered that the wrong emission limit was used to calculate the

ARA, thereby yielding failing results with an ARA of 20%.

Boiler no. 13 is subject to two NOx emission limits. According to condition no. I.1 of table FG432BOILERS in the ROP, boiler no. 13 has a NOx emission limit of 0.041 lbs/MMBTU (based on a 24-hour rolling average as determined each hour). However, boiler no. 13 is also subject to 40 CFR Part 60, Subpart Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units) which limits NOx emissions from the boiler to 0.10 lbs/MMBTU (based on a 30-day rolling average). For the May 2019 test report, calculation of the ARA for boiler no. 13 was conducted using the 0.10 lbs/MMBTU NOx emission limit. However, DSC has since been informed by EGLE that because the 0.041 lbs/MMBTU NOx limit has a shorter averaging time, it should have been used in the ARA calculation instead. DSC's corrected understanding of the emission limit and averaging time as it pertains to the ARA calculation will be communicated in future annual RATA test plans and reports for the boilers.

The reason for the repeated failure is not completely understood, other than DSC believes the NOx CEMS has operated beyond its useful life and needs to be replaced. As mentioned in previous communication with EGLE, the NOx CEMS associated with boiler nos. 12, 13, and 14 will be replaced with new, dual range mode instruments by the end of third quarter 2020 or sooner. DSC will not operate boiler no. 13 for anything other than testing and/or troubleshooting until passing RATA results are obtained.

In follow up communication with EGLE on August 5, 2019, verification of the following was suggested by EGLE in order to produce future passing RATA results on boiler no. 13.

1. Verify that a leak upstream of where the calibration gas enters the CEMS unit does not exist.
2. Verify that the NOx analyzer isn't experiencing a different pressure or flow rate during calibration when compared to normal operation.

During completion of these tasks, a loose probe cap was discovered which may have been a leak source during the RATA. This issue has been corrected and should not cause failure during the next test.

During discussions with EGLE on August 5th, it was also suggested that DSC conduct daily CEMS calibration drift checks using a lower concentration calibration gas. As a result, DSC requested EGLE approval to use a 100 ppmv NOx concentration calibration gas on September 23, 2019 and received approval the same day. Daily calibration checks at a lower concentration, which is closer to our actual NOx emission rate, should increase the accuracy of the CEMS unit. DSC is expecting to begin using the lower concentration gas by October 31, 2019.

At present, boiler no. 13 is shut down for inspection and has been since August 1, 2019. A third RATA on the NOx and oxygen CEMS on boiler no. 13 will be completed once the inspection is complete and the boiler is able to run. Currently, it's anticipated that a RATA on boiler no. 13 will be completed by November 30, 2019. Pursuant to the requirements of R 336.2001(4), DSC will notify EGLE of the intent to conduct testing no less than seven days before the test date. DSC will follow the previous test plan submitted to EGLE on January 18, 2019 and approved in a letter dated March 12, 2019.

The alleged permit condition violation cited in EGLE's letter will be reported as a deviation in the annual deviation report due March 15, 2020 and will include the reasons and corrective action cited above.