

Ms. Joyce Zhu EGLE – Air Quality Division 27700 Donald Court Warren, MI 48092



RE: DTE Electric Company Response to the EGLE-AQD Violation Notice of January 25, 2023 Issued to Blue Water Energy Center

This letter is in response to the Violation Notice (VN) issued by EGLE-AQD to DTE Electric Company on January 25, 2023 to Blue Water Energy Center related to nitrogen oxides (NOx) excess emissions. The VN cited the following:

Process Description	Rule/Permit Condition Violated	Comments
EUCTGHRSG1	SC 1.1	DTE submitted an abnormal condition report indicating the NOx 2.0 ppm @ 15% O2 limit, based on a 24-hour rolling average, had been exceeded between 0200 and 0800 on January 12, 2023

During this period, the 24-hour average emissions did exceed the permit limit of 2.0 ppm as summarized in the table below.

Hour	24-Hour Rolling Average NOx (ppm)
0200	2.1
0300	2.1
0400	2.1
0500	2.1
0600	2.1
0700	2.1
0800	2.1

Once excess emissions were observed through the plant's continuous emissions monitoring system (CEMS), the plant took immediate corrective actions to reduce emissions. This included increasing ammonia injection and reducing load on the unit. After a short period of time, the 24-hour rolling average concentration returned to normal levels compliant with the permitted limit. Emissions have remained in compliance since the issue was identified.

The plant is equipped with a selective catalytic reduction (SCR) system for the control of NOx emissions. Aqueous ammonia is stored onsite and injected into the SCR system. A chemical reaction occurs between the injected ammonia and the NOx in the flue gas to eliminate the NOx emissions by approximately 90%. The cause of the excess emissions being reported in this report was found to be inadequate ammonia injection to adequately reduce NOx to the permitted level. Several areas were investigated in association with the issue as outlined below.

- Ammonia injection control system (pumps, valves, nozzles)
- Catalyst performance (pluggage, ammonia slip, adequate interaction with catalyst)
- Measurement control (flow, emissions, ammonia slip)

After investigation, an increase in NOx to the inlet of the SCR has been identified. The higher NOx level caused the normal operation of the ammonia control system to be inadequate when operating in automatic control. The ammonia injection set point has been adjusted to maintain NOx emissions in compliance with permitted levels at the higher inlet NOx level. Additional investigation is continuing to understand the cause of the elevated inlet NOx levels which can occur for variuos reasons. The changes made to the set point will ensure that NOx is controlled regardless of the reason for the elevated NOx level. Plant Operations also inspected all areas of the ammonia injection control system and other components and no other issues were identified.

In an effort to ensure that the plant has adequate time to respond to elevated emissions, additional alarms have been programmed into the CEMS. This includes alarms to signal elevated emissions over a shorter period of time (two hours) so that actions can be taken sooner to prevent further exceedances of the 24-horu rolling average. The plant has several mitigating actions that can be taken to reduce emissions and the shorter term alarm will allow for these ations to be taken more quickly.

If you have any questions on the information in this letter or would like further information, please contact me at Barry.Marietta@dteenergy.com or (810) 343-6391.

Sincerely

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DTE Energy

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