



May 24, 2021

Julie Brunner
EGLE/AQD, Lansing District
525 W Allegan
PO Box 30242
Lansing, MI 48909

SUBJECT: Response to Violation Notice, REO Station, MI-ROP-B2647-2018 Lansing Board of Water & Light

Dear Ms. Brunner,

On May 6, 2021 the Lansing Board of Water and Light received a Violation Notice for our REO Town Plant EUTURBINE2 for an exceedance of the 24-hour rolling average NOx pound per hour (pph) permit limit that occurred on March 15, 2021. This exceedance was reported in person on March 17, 2021 during an onsite inspection and followed up with a Rule 912 Report on March 23, 2021 after an initial investigation was conducted.

The March 15, 2021 exceedance occurred for a period of 6 hours from 03:00am to 08:59am and is not ongoing. The exceedance was discovered at 07:00am at which time the unit load was reduced to bring emissions below the permitted limit. Due to the limit being a 24-hr rolling average, the results of this effort were not visible until beyond the 08:00 hour, at which point the exceedance ceased. The below chart indicates the emissions and load information as read from StackVision:

Date / Hour	EUTURBINE2 mW	NOx pph 24-hr Rolling Average	Excess of Applicable Requirement
March 15, 2021 03:00-03:59	43	39.9	0.3
March 15, 2021 04:00-04:59	43	40.2	0.6
March 15, 2021 05:00-05:59	43	40.4	0.8
March 15, 2021 06:00-06:59	43	40.6	1.0
March 15, 2021 07:00-07:59	38	40.4	0.8
March 15, 2021 08:00-08:59	37	39.9	0.3

We are currently in the process of completing a Root Cause Analysis (RCA) for this event. Although it is not complete, below provides a summary of what has been completed and related findings at this time.





Upon the reduction in load and the stabilization of the unit, the unit remained load restricted until contract support could be scheduled. On March 27, 2021 EUTURBINE2 was taken off-line and engineers from GE arrived on March 28, 2021 (the earliest available date) to inspect the turbine. The purpose of the visit was to conduct a hot-section borescope to identify any possible damage from foreign object debris (FOD), a fuel line contamination check, and gas pre-mixer flow testing to identify the potential reasons of the increased NOx emissions.

During the inspections, it was found that 67 of the 90 fuel nozzles failed the fuel flow testing criteria. In addition, fuel line coking and liquid residue was also found within the fuel lines. Upon these findings the fuel nozzles and fuel lines were replaced. This work was completed on April 2, 2021 and followed by a start-up of the unit. Upon unit start-up, NOx emissions were significantly reduced to approximately half the permit limit. The unit was then mapped (tuned) by GE Technicians as is normally conducted for seasonal change in temperature for optimal performance and NOx emissions.

Although the formal RCA is still in progress to determine why the fuel system coking occurred, changes and procedures have been put in place to prevent reoccurrence of this or similar emission exceedances. This includes a change in the StackVision console viewer, which includes the permitted emission limits near the actual emissions readout and instantaneous readings of emissions on the screen for identifying and predicting concerns earlier than what a 24-hr average allows. Additionally, a manual entry emissions log sheet was created for operators to conduct hourly emissions checks. Training on the new console viewer and the new emissions log sheet was provided to the plant operators.

If you have any questions, please contact Nathan Hude of our Environmental Services Department at (517) 702-6170.

Sincerely,

A handwritten signature in blue ink that reads "Lori Myott".

Lori Myott
Manager, Environmental Services Department
Lansing Board of Water & Light
PO Box 13007
Lansing, MI 48901

cc: Julie Brunner, EGLE (electronic copy submittal)
Jenine Camilleri, EGLE (electronic and hard copy submittal)
Bruce Kirby, LBWL (electronic submittal)

