

August 31, 2020

Mr. Robert Elmouchi, Sr. Environmental Quality Analyst
Michigan Department of Environment, Great Lakes, and Energy – Air Quality Division
Warren District Office
27700 Donald Court
Warren, MI 48092-2793

Re: Consumers Energy Company's Ray Compressor Station (B6636)
Response to Violation Notice, Dated August 10, 2020

Dear Mr. Elmouchi:

Consumers Energy Company (CE) is providing this written response to the Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) Violation Notice, dated August 10, 2020, in reference to an incident involving EUTURBINE2-6 (Unit 2-6) located at CE's Ray Compressor Station in Armada, Michigan.

Cited Violation:

Process Description – Emergency venting of 1.49 MMCF of natural gas

Alleged Rule/Permit Condition Violated – MI-ROP-B6636-2015a, FG-RULE-285(mm), VII.6 and R 336.1285(2)(mm)(iv)

Comments – Permittee failed to notify the pollution emergency alert system (PEAS) within 24 hours of an emergency pipeline venting of natural gas in amounts greater than 1,000,000 standard cubic feet (1 MMSCF).

CE Response:

Day of Incident

On July 5, 2020, at 00:13:00 hours, Ray Unit 2-6 experienced an unplanned shutdown resulting in a natural gas fire. Initial and immediate response activities focused on protecting employee and public safety by following CE's Gas Emergency Response Plan (ERP) and Gas Incident Reporting (GIR) Notification Matrixes. Based on the equipment involved, as well as visual observation of the fire, the on-call station operator believed that the fuel source for the fire was solely fuel gas. Using this information, a gas loss calculation was performed on July 5, 2020 based on fuel gas piping size, pressure, along with the duration, resulting in an estimated volume of 0.083 mmcf. Therefore, a notification pursuant to Rule 285(2)(mm)(iv) was not made at that time, as none was required at that volume of natural gas loss. The initial damage estimate as a result of the incident was less than \$25,000. Please note that a notification to the

Michigan Public Service Commission (MPSC) was made, as required. In addition, in the days following the incident, CE also responded to concerned residents in the area and notified the township supervisor of the incident.

Root Cause Analysis (RCA)

Once the equipment/area was safe to enter, a root cause analysis (RCA) investigation began on July 8th to determine the root cause of the shutdown and resulting fire. The RCA investigation determined that a mechanical seal failure occurred between the turbine reaction chamber and the turbine. The failure of the seal allowed the interaction of oil and high temperature natural gas, which resulted in a fire in the insulation. This provided a heat source to ignite the natural gas near the exhaust stack. The fire was limited to the Unit 2-6 skid and exhaust stack.

The RCA also determined that the incident resulted in unstable turbine speed, sending multiple high- and low-speed alarms to the Programmable Logic Controller (PLC). The PLC alarm register reached capacity, which resulted in the PLC shutting down, no longer communicating with the unit. The PLC shutting down prevented the unit from shutting down properly, including the failure of the process natural gas suction, discharge and fuel gas valves closing. When the PLC was returned to service, a test was conducted to ensure that all valves were able to be closed. This test confirmed that the valves were operational and, if the PLC did not fail, that the valves would have closed, as designed, and the unit would have shut down and less gas would have been released/combusted.

On July 14, 2020, the RCA investigation identified that the fuel source for the fire was not just fuel gas, but also process gas. Based on this updated information, and to determine total cost of the incident, a request was made on July 24, 2020 to our internal Measurement Engineering (ME) team to update the estimated volume of gas loss. However, additional information needed to complete the estimate was not provided to ME until July 30th when the estimate was completed. Initial damage estimates as a result of the incident were less than \$25,000. However, due to the extent of the damage to the equipment, the RCA investigation determined that the total anticipated repair cost would exceed \$1,000,000. Due to this increased damage estimate, and pursuant to 40 CFR 1604, a notification was made on July 30, 2020 to the National Response Center (NRC) and the Chemical Safety Board (CSB) regarding the incident. We understand that EGLE-AQD received this notification in accordance with standard NRC procedures. On Friday, July 31, 2020, EGLE-AQD verbally requested additional information from CE regarding the quantity of natural gas released as a result of the incident. The revised gas quantity, which totaled 1.49 MMSCF, was provided to EGLE-AQD on Monday, August 3, 2020, via email.

Corrective Actions

To prevent reoccurrence with similar units, CE reviewed the control logic and configuration of all turbines in the CE fleet to validate risk of PLC overload is not present. Additionally, functional tests will be performed for all CE turbines to verify that loss of controls, or similar communication loss, does not result in the safety systems inability to safely operate. This

testing is required to be conducted when a unit is operating (none of the CE turbines are currently operating based on the incident). The testing will be completed prior to each unit being returned to service.

Additional corrective actions have included company-wide communications to educate and bring additional awareness of our current standard procedures/processes for calculating and reporting natural gas releases. This included a reminder that such calculations need to occur within 24 hours of an emergency event, in accordance with the regulations, and to be conservative when performing initial gas loss calculations when the root cause may not be readily available. In addition, we are using problem solving tools to identify any gaps in our current procedures, specifically when new/updated information becomes available that could affect the gas loss estimate. Required updates to our written internal processes and/or standards will be completed by September 30, 2020.

Consumers Energy takes great pride in being a strong, ethical corporate citizen and environmental steward in the communities it serves. This incident was isolated in nature and no emission limits were exceeded. Additionally, the root cause of the incident has been properly addressed to prevent reoccurrence. If you have any questions, or would like additional information, please contact Amy Kapuga at 517-788-2201.

Sincerely,

Avelock Robinson

Avelock Robinson
Consumers Energy Company
Director, Gas Compression Operations

cc: Ms. Jenine Camilleri, Enforcement Unit Supervisor, EGLE, PO Box 30260, Lansing, MI 48909-7760
Mr. Scott Sinkwitts, Corporate Counsel, CE
Mr. Dominic Tomasino, Sr. Field Leader, CE
Ms. Amy Kapuga, Senior Engineer – CE Air Quality
Mr. James Walker, Senior Engineer Lead – CE Air Quality
Mr. James Roush, Director of Environmental Regulation and Strategy, CE