



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

ELECTRONIC MAIL
DELIVERY RECEIPT REQUESTED

Amy D. Kapuga
Senior Environmental Engineer
Consumers Energy Company
Muskegon River Compressor Station
amy.kapuga@cmsenergy.com

RE: Request for Formaldehyde Testing Extension under 40 C.F.R. Part 63, Subpart YYYY
Consumers Energy Company, Muskegon River Compressor Station, Marion, Michigan

Dear Ms. Kapuga:

The U.S. Environmental Protection Agency has received and reviewed your letter from Consumers Energy Company (CEC), dated September 2, 2022, requesting approval of an extension of the deadline for the initial performance testing on a lean, pre-mix natural gas fired Solar Taurus 70 turbine (EUTURBINE2-2) at the Muskegon River Compressor Station located in Marion, Michigan. The turbine is subject to 40 C.F.R. Part 63, Subpart YYYY, National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines (Subpart YYYY). Specifically, CEC requested that EPA approve an extension for UTURBINE2-2 of the deadline for demonstrating initial compliance with the emission limitations and operating limitations in Subpart YYYY from September 5, 2022, to December 31, 2022, due to events that CEC believes may qualify under the “force majeure” provisions of 40 C.F.R. §63.7(a)(4). For the reasons discussed below, EPA denies this request.

Factual Background

CEC owns and operates a natural gas compressor station known as the Muskegon River Compressor Station (MRCS) at 8613 Pine Road, Marion, Clare County, Michigan. MRCS maintains pressure of natural gas to move in and out of underground natural gas reservoirs and along the natural gas pipeline system. MRCS is a major stationary source under the Clean Air Act and operates under the requirements of Michigan’s Permit to Install (PTI) #16-21A, and Renewable Operating Permit (ROP) #MI-ROP-N2910-2020 issued by the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

According to CEC, in 2021 it began installing EUTRUBINE2-2, with the rated capacity of 11,419 horsepower (hp). The initial startup of the turbine occurred on February 9, 2022. The

turbine is equipped with dry, low-NO_x (SoLoNO_x) combustion control, and was installed to replace the functionality of retired equipment and increase reliability of the station during the winter withdrawal season which typically runs from December – March. Winter withdrawal season concluded on March 16, 2022, and EU TURBINE2-2 was shut down until the next winter withdrawal season. CEC scheduled formaldehyde testing for August 30, 2022, for demonstrating initial compliance with Subpart YYYYY. CEC states that it had attempted to operate the centrifugal compressor supported by EU TURBINE2-2 in an abnormal operating condition using a closed-loop configuration, as natural gas demands did not support normal operation during summer months.

CEC asserts that, prior to conducting the performance test, formaldehyde and methane concentrations were observed to be higher than expected from EUTURBINE2-2. The turbine manufacturer, Solar, began trouble-shooting efforts to determine the cause of the elevated formaldehyde and methane concentrations. This included reviewing operating parameters and adjusting air/fuel ratio. However, formaldehyde and methane concentrations remained at high levels and, therefore, the initial compliance demonstration did not occur as scheduled.

CEC claims that it continued investigating the possible causes. With assistance from Solar, CEC came up with the theory that, because EUTURBINE2-2 only accumulated approximately 200 operating hours at the end of winter withdrawal season, there may be packing grease/oil within the exhaust stack that is still in the process of burning off, which was generating hydrocarbon emissions (including formaldehyde and methane) downstream from the turbine exhaust. According to Solar, a feasible burn-in period would be ≥ 500 hours to minimize possible contamination of exhaust gases downstream from the turbine discharge.

CEC's Request

CEC is working through confined space entry and lockout tagout procedures so that personnel may enter the turbine exhaust duct/stack to visually inspect for possible oil/grease or other foreign materials that could generate additional hydrocarbon emissions downstream from the turbine exhaust. CEC is planning commissioning activities to re-commence a seven-day reliability run in December 2022. CEC requests EPA to approve the completion of the initial compliance demonstration by the later of December 31, 2022, or within 30 calendar days following commissioning of the turbine unit.

CEC requests EPA approval of this request, pursuant to the force majeure provisions at 40 C.F.R. § 63.7(a)(4). Under 40 CFR § 63.2, “force majeure” is defined as an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents the owner or operator from complying with the regulatory requirement to conduct performance tests within the specified timeframe despite the affected facility’s best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility.

CEC states that the circumstances which prevented it from conducting the required performance testing by the initial compliance deadline of September 5, 2022, include the seasonal operation of the turbine and the limited amount of run time on the unit. CEC claims that a new turbine is allowed 180 days for the purpose of shakedown and commissioning; however, the limited remaining withdrawal season following initial startup of the unit was such that shakedown and commissioning has yet to be completed. Attaining the Solar-recommended burn-in period of ≥ 500 hours before recommending formaldehyde testing prior to the winter withdrawal season requires the turbine to be operated solely for conducting the formaldehyde test and entails running the associated centrifugal compressor in an abnormal operating condition (closed-loop). This operating condition caused a buildup of pressure which required the natural gas to be vented into the atmosphere, resulting in associated methane emissions, and potentially posing a safety hazard for on-site personnel.

For the reasons discussed in its September 2, 2022, letter, CEC requests that EPA approve the requested extension of the performance test deadline for EUTURBINE2-2 in writing, or otherwise provide CEC assurance that EPA will exercise its enforcement discretion.

Analysis

EPA has reviewed CEC's September 2, 2022, letter with the information presented seeking an extension for the compliance demonstration. As you are aware, the compliance deadline for the turbine (the "affected facility" under 40 C.F.R. Part 63, Subpart YYYY) was March 9, 2022, and the deadline for demonstration for the compliance is not later than 180 days from March 9, 2022, which was September 5, 2022.

As EUTURBINE2-2's initial startup occurred on February 9, 2022, and CEC's formaldehyde stack testing deadline was September 5, 2022, there was sufficient time for CEC to complete the initial shakeout and commissioning of the turbine. Therefore, based on review of the information submitted, EPA concludes that CEC did not provide sufficient rationale for an extension to be granted in accordance with the force majeure provisions of 40 CFR § 63.7(a)(4).

Your letter states that CEC was able to operate the centrifugal compressor supported by EUTURBINE2-2 in an abnormal operating condition using a closed-loop configuration within perimeters mentioned in footnote 1 of your letter to avoid safety issues. However, your letter further states that, prior to conducting the performance test for formaldehyde, you observed elevated levels of formaldehyde and methane concentrations and that they remained at high levels, so you did not initiate compliance demonstration as scheduled on August 30, 2022. After reviewing operating parameters and adjusting the air/fuel ratio, you still observed formaldehyde and methane concentrations at high levels. A potential failure with the formaldehyde emissions limit is not a valid reason to request an extension.

CEC was required to perform formaldehyde emissions testing by September 5, 2022. However, the company chose to wait until August 30, 2022, only a few days prior to the test deadline. This did not provide sufficient time to address potential issues associated with the affected facility and

complete any troubleshooting that your letter states you are now performing. Also, CEC provided no information on what its troubleshooting uncovered and what CEC personnel were able to observe upon entering the turbine exhaust duct/stack. Thus, EPA does not have a sufficient explanation for the cause of the elevated readings and for whether there is indeed action CEC could have taken to resolve the identified issues in a timely manner prior to the testing deadline of September 5, 2022.

Based on the information provided, EPA concludes that CEC had sufficient time following February 9, 2022, the date of initial startup of EUTURBINE2-2, for an appropriate shakedown and commissioning period for the affected unit, and that it was within CEC's control to do so prior to the testing deadline of September 5, 2022. However, CEC chose to delay the compliance demonstration until the test deadline was approaching and did not leave any time for follow-up actions. Therefore, the events as described in your letter do not qualify as "force majeure" under the provisions at 40 C.F.R. § 63.7(a)(4), as CEC has not shown that the events were caused by circumstances beyond its control. Therefore, EPA denies your request for an extension of the initial performance test deadline for EUTURBINE2-2.

Please note that EPA also reserves right to initiate any subsequent follow-up enforcement action due to this potential non-compliance issue at the MRCS.

We have coordinated this determination with EPA's Office of Enforcement and Compliance Assurance and the Office of Air and Radiation. If you have any further questions, please contact Manojkumar P. Patel of my staff at (312) 353-3565.

Sincerely,

**MICHAEL
HARRIS**

Digitally signed by
MICHAEL HARRIS
Date: 2022.12.06
14:40:40 -06'00'

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