



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

January 13, 2023

Mr. Christopher Rumer  
Environmental Specialist  
Transcontinental Gas Pipe Line Company, LLC  
1600 Executive Drive South  
Suite 200  
Duluth, Georgia 30096

Dear Mr. Rumer:

This is in response to your letter dated June 25, 2022, requesting approval of a continuous monitoring system (CMS) plan petition for Title 40, Code of Federal Regulation (C.F.R.), Part 63, Subpart YYYY - National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Combustion Turbines, as it applies to the combustion turbine operated by the Transcontinental Gas Pipe Line Company, LLC (Transco) at Compressor Station 85 in Butler, Choctaw County, Alabama.

The U.S. Environmental Protection Agency requested additional information from you on July 22, 2022, November 2, 2022, and November 30, 2022, and received information on August 3, 2022, November 29, 2022, December 1, 2022, and December 7, 2022. Based on our review of all available information, including additional information provided by you, your CMS plan is acceptable, subject to specific conditions. Details regarding the CMS plan and the basis for our determination are provided in the remainder of this letter.

Description of Combustion Turbine Unit Emission Point (EU006)

Transco operates a lean premix Solar Titan 130-20502S natural gas-fired combustion turbine rated at 20,696 hp (Source ID EU006). For Solar turbines, the lean premix mode is indicated by "SoLoNOx mode". The set point for "SoLoNOx mode" primarily depends on two parameters: gas producer turbine speed (NGP in %) and inlet ambient air temperature ( $T_1$ ), which are monitored continuously through the manufacturer's programmable logic controller (PLC). Site-specific conditions, such as elevation, may minimally alter the set point. The NGP is a primary performance indicator for the system, which indicates turbine load. Information supplied by Solar Turbines suggests that the "SoLoNOx mode" is enabled when the NGP is 87% or higher, depending on the model type and  $T_1$ . Set points for "SoLoNOx mode" are established with a 0.5% safety factor above the minimum NGPs calculated by the PLC. If an event occurs that would cause "SoLoNOx mode" to be disabled, alarms will sound and notify operations of corrective actions. Since the turbine was constructed after January 14, 2003, it is a new affected source under Subpart YYYY. The unit is not equipped with an oxidation catalyst to control emissions of formaldehyde.

## Description of Transco's CMS Petition

Transco proposes to continuously monitor the lean premix mode indicator ("SoLoNOx mode" for Solar turbines) and related parameters (NGP and  $T_1$ ) to ensure compliance with the formaldehyde emission standard during normal operations. The lean premix mode of operation ensures good combustion practices are being achieved during operation of the turbine and is only indicated during normal operations.

Transco proposes to continuously monitor and record NGP and  $T_1$  to confirm that "SoLoNOx mode" is enabled. NGP is measured using a magnetic pickup located at the front of the combustion turbine shaft.  $T_1$  is measured with a resistance temperature device (RTD) located in the turbine air inlet ducting. The parameters are displayed on the Human Machine Interface (HMI) and are automatically inventoried in the HMI log files. The combustion turbine "SoLoNOx mode" performance parameters are monitored by the PLC and the data are sent to the control room HMI at approximately one second intervals. Transco will calculate the four-hour rolling averages on a continuous basis for compliance and recordkeeping purposes. The monitoring devices are installed, maintained, calibrated, and operated in accordance with approved procedures that include, at a minimum, the manufacturer's written requirements and recommendations. Monitoring devices for the "SoLoNOx mode" indicator parameters will be verified/recalibrated as part of the annual gas turbine inspection. The procedures are described in Transco's Solar Gas Turbine Annual Inspection Guideline.

Transco proposes to conduct the initial formaldehyde emission standard compliance testing within 10% of high load while the combustion turbine is operating within the lean premix mode. After testing, Transco proposes to continuously monitor and record the four-hour rolling averages of the related parameters to indicate compliance with the operating limit range established by the formaldehyde emission standard testing.

## EPA's Review of Subpart YYYY Standards and CMS Petition Requirements

Under 40 C.F.R. § 63.6085, owners and operators are subject to Subpart YYYY if they own or operate a stationary combustion turbine located at a major source of hazardous air pollutant (HAP) emissions. Under 40 C.F.R. § 63.6090(a)(2), a stationary combustion turbine is a new source if construction commenced after January 14, 2003. Under 40 C.F.R. § 63.6095(a)(3), new lean premix gas-fired stationary combustion turbines which started operation on or before March 9, 2022, must comply with the emissions limitations and operating limitations in this subpart no later than March 9, 2022. Under 40 C.F.R. § 63.6100, each new lean premix gas-fired stationary combustion turbine must comply with the emission limitations and operating limitations in Table 1 and Table 2 of Subpart YYYY, respectively. Table 1 of Subpart YYYY limits the concentration of formaldehyde to 91 parts-per-billion by volume, dry basis (ppbvd), or less, at 15-percent  $O_2$  for new lean premix gas-fired stationary combustion turbines, except during turbine startup. Table 2 of Subpart YYYY requires owners/operators to maintain operating limitations approved by the EPA Administrator to continuously demonstrate compliance with the emission limit during non-testing periods.

Under 40 C.F.R. § 63.6105(a) and (c), after September 8, 2020, owners/operators must comply with the applicable emission limitations, operating limitations, and other requirements of Subpart YYYY, and must always operate and maintain any affected source in a manner consistent with safety and good air pollution control practices for minimizing emissions.

Under 40 C.F.R. § 63.6110(a), owners/operators must conduct the initial performance tests or other initial compliance demonstrations in Table 4 to Subpart YYYYY that apply within 180 calendar days after the compliance date specified (*e.g.*, by September 9, 2022) for affected source stationary combustion turbines according to the provisions in 40 C.F.R. § 63.7(a)(2) unless a historical test may be accepted according to the provisions of 40 C.F.R. § 63.6110(b). Under 40 C.F.R. § 63.6115, subsequent performance tests must be performed on an annual basis as specified in Table 3 to Subpart YYYYY.

Under 40 C.F.R. § 63.6125(b), for a stationary combustion turbine not using an oxidation catalyst to comply with the formaldehyde emission limit, owners/operators must continuously monitor any parameters specified in your approved petition to the Administrator, to comply with the operating limitations in Table 2 to Subpart YYYYY, and as specified in Table 5 to Subpart YYYYY.

Under 40 C.F.R. § 63.6120(f), for a stationary combustion turbine not equipped with an oxidation catalyst, owners/operators may petition the Administrator for approval of operating limitations to demonstrate compliance with the formaldehyde emission limitation during non-testing periods. In these cases, the petition must include:

- (1) Identification of the specific parameters you propose to use as additional operating limitations;
- (2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters and how limitations on these parameters will serve to limit HAP emissions;
- (3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;
- (4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and
- (5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

Under 40 C.F.R. § 63.6125(e), after September 8, 2020, for owners/operators using a CMS to indicate compliance with the formaldehyde emissions standard during non-testing periods, a CMS quality control program must be developed and implemented which includes written procedures for the CMS according to 40 C.F.R. § 63.8(d)(1-2). Additionally, a program of corrective action should be included in the plan required under 40 C.F.R. § 63.8(d)(2).

Under 40 C.F.R. § 63.6135(a), except for monitor malfunctions, associated repairs, and required applicable quality assurance or quality control activities, owners/operators must always conduct all parametric monitoring when the stationary combustion turbine is operating.

Under 40 C.F.R. § 63.6120(e), when a CMS petition is required to be submitted to the Administrator, owners/operators must not conduct the initial performance test until after the petition has been approved or disapproved by the Administrator.

## The EPA's Determination for Transco's CMS Plan Petition

Based on supporting and available information, the following CMS plan is acceptable to the EPA:

- i.) Under 40 C.F.R. § 63.6120, Transco must conduct performance testing at the high load, defined as 100 percent plus or minus 10 percent. Testing must not include data from startup, shutdown, or malfunction events.
- ii.) The lean premix mode indication, NGP, and T<sub>1</sub> shall be monitored and recorded at a minimum frequency of at least once every 15 minutes during testing conducted to successfully demonstrate compliance with the formaldehyde emission standard promulgated in 40 C.F.R. § 63.6100 and Table 1 to Subpart YYYY.
- iii.) One-hour averages of NGP and T<sub>1</sub> shall be determined by computing hourly averages using all readings, with intervals at least once every 15 minutes taken during the formaldehyde emission standard compliance demonstration testing event. The four-hour rolling averages of NGP and T<sub>1</sub> shall be determined by computing the four-hour rolling averages using all hourly averaged readings taken during the formaldehyde emission standard compliance testing event.
- iv.) Indication of lean premix mode operation must be continuously monitored and recorded at a minimum frequency of at least once every 15 minutes during formaldehyde emission standard compliance testing, and continuously thereafter.
- v.) Except for startup, the turbine must be operated in the lean premix mode of operation to ensure compliance with this approval.
- vi.) Following formaldehyde emission compliance demonstration testing, the four-hour rolling average of the related parameters must be continuously monitored and recorded to indicate compliance with the formaldehyde emission standard.
- vii.) Transco must verify the monitoring devices' accuracy once annually according to the manufacturer's recommend procedures and maintain records of the annual verifications for inspection purposes.

The EPA's approval of Transco's CMS plan is based on information provided in the Transco's submission and research conducted by the EPA. The EPA's approval is contingent on a successful demonstration of formaldehyde emission standard compliance resulting from a testing event. Should Transco change the operating conditions of the turbine to an operation which is different than the operating conditions represented in this approval such that formaldehyde emissions increase because of the change, Transco must submit a revised CMS plan petition to address the change(s).

Nothing in this CMS plan approval excludes the EPA from reopening this CMS plan approval to adjust its conditions, if needed, for enhancement of emission standard compliance assurance. If Transco discovers an additional parameter, or additional parameters, which indicate additional parametric monitoring operating limits are necessary to assure compliance with the formaldehyde emission standard, Transco must submit a revised CMS plan petition to the EPA to revise the CMS plan and incorporate the additional operating limit(s) based on the discovery. Finally, if Transco recognizes an opportunity to revise the CMS plan based on other CMS plan approvals issued by the EPA, or new information is obtained by Transco which may reduce the burden of tasks necessary for compliance assurance but still effectively assure compliance with the formaldehyde emission standard, Transco may file a petition to the EPA referencing that information to revise this CMS plan.

Please note that our approval does not alter Transco's obligations to meet all other applicable NESHAPs, including, but not limited to, the following NESHAP general provisions:

- The requirement to maintain and operate affected facilities and associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions, per 40 C.F.R. § 63.6; and
- The prohibition against concealing emissions which would otherwise constitute a violation of an applicable standard, including the use of gaseous diluents to achieve compliance with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere, per 40 C.F.R. § 63.4.

This CMS petition approval was coordinated with the EPA's Office of Enforcement and Compliance Assurance and Office of Air Quality Planning and Standards. If you have any questions about this CMS petition conditional approval, please contact Tracy Watson at (404) 562-8998, or by email at [watson.marion@epa.gov](mailto:watson.marion@epa.gov), or Henian Zhang at (404) 562-8123, or by email at [zhang.henian@epa.gov](mailto:zhang.henian@epa.gov).

Sincerely,

**ANTHONY  
TONEY**  Digitally signed by  
ANTHONY TONEY  
Date: 2023.01.18  
19:57:14 -05'00'

Caroline Y. Freeman  
Director  
Air and Radiation Division

cc: Sara Ayres, EPA OECA  
Ronald W. Gore, ADEM  
Melanie King, OAQPS