



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

**ELECTRONIC MAIL**  
**DELIVERY RECEIPT REQUESTED**

Hima Draksharam  
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RE: Request for Operating Limits / Monitoring Petition under 40 C.F.R. Part 63, Subpart YYYYY, NESHAP for Stationary Combustion Turbines  
TC Energy, Houston, Texas

Dear Ms. Draksharam:

The U.S. Environmental Protection Agency (EPA) has received and reviewed a petition dated June 23, 2022, from TC Energy doing business as ANR Pipeline Co. (ANR or you) at two facilities in Indiana. The petition requests the use of Gas Producer Turbine Speed (%NGP) and Inlet Air Temperature (T1) for satisfying operating limits to demonstrate compliance with the formaldehyde emissions limitation for lean premix gas-fired combustion turbines under 40 C.F.R. § 63.6125(b) at TC Energy's LaGrange and Sulphur Springs Compressor Stations in LaGrange, and Sulphur Springs, Indiana. In summary, EPA partially approves and partially denies ANR's petition to use %NGP and T1 as operating limits under the regulations at 40 C.F.R. Part 63, Subpart YYYYY.

**Regulatory Background**

40 C.F.R. Part 63, Subpart YYYYY, National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines (Subpart YYYYY) establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emissions from stationary combustion turbines located at major stationary sources of HAP emissions, and requirements to demonstrate initial and continuous compliance with the emission and operating limitations.

40 C.F.R. § 63.6095(a)(3) requires the owner or operator of a new or reconstructed lean premix gas-fired stationary combustion turbine or a diffusion flame gas-fired stationary combustion turbine that started up on or before March 9, 2022, to comply with the emissions limitations and operating limitations of Subpart YYYYY no later than March 9, 2022.

40 C.F.R. § 63.6100 requires that each new or reconstructed 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. Table 1 provides that each new or reconstructed lean premix gas-fired stationary combustion turbine must comply with an emission limit of 91 ppbvd formaldehyde or less at 15% O<sub>2</sub>, except during turbine startup. The period for turbine startup is subject to the limits specified at 40 C.F.R. § 63.6175. Table 2 requires each stationary combustion turbine that is required to comply with the formaldehyde emissions limitation and is not using an oxidation catalyst to maintain any operating limitations approved by the Administrator.

40 C.F.R. § 63.6120(e) states that if the owner or operator's stationary combustion turbine is not equipped with an oxidation catalyst, it must petition the Administrator for operating limitations that you will monitor to demonstrate compliance with the formaldehyde emission limitation in Table 1. The owner or operator must measure these operating parameters during the initial performance test and continuously monitor thereafter. 40 C.F.R. § 63.6120(f) provides the specific information that must be included in a petition to the Administrator for approval of additional operating limitations to demonstrate compliance with the formaldehyde emission limitation in Table 1.

40 C.F.R. § 63.6125(b) requires that owners or operators of a stationary combustion turbine that is required to comply with the formaldehyde emission limitation and not using an oxidation catalyst must continuously monitor any parameters specified in the approved petition to comply with operating limitations specified in Table 2 and as specified in Table 5 of the Subpart.

All terms used in this letter have their ordinary meaning unless such terms are defined in the Clean Air Act, 42 U.S.C. §§ 7401 *et seq.*, or Subpart YYYY, in which case they have the meaning ascribed to them in those authorities.

### **ANR's Petition**

ANR owns and operates two gas-fired lean premix stationary combustion turbines identified as Unit T01 at the Sulphur Springs Compressor Station in Sulphur Springs, Indiana, and Unit TR01 at the LaGrange Compressor Station in LaGrange, Indiana. The turbines were constructed after January 14, 2003, are not equipped with oxidation catalysts, and are "affected source[s]" under Subpart YYYY; therefore, the compliance deadline was March 9, 2022.

ANR submitted its petition under 40 C.F.R. § 63.6120(e) for justifying the required information under 40 C.F.R. § 63.6120(f)(1) through (5). ANR requests that EPA accept monitoring of Lean Premix Mode, Gas Producer Turbine Speed (%NGP), and Inlet Air Temperature (T1) as parameters to meet the Subpart YYYY monitoring requirements for lean premix combustion equipped gas-fired turbines, instead of utilizing oxidation catalysts.

ANR claims that lean premix mode (LPM) "is dependent on" %NGP and T1. ANR claims that LPM combustion provides "the mixing necessary to ensure complete combustion of the fuel and minimize emissions of CO and UHCs [unburned hydrocarbons] including formaldehyde."

## **EPA's Analysis**

The petition addresses the required information described in 40 C.F.R. § 63.6120(f)(1) through (5), as summarized below. EPA makes the following determinations regarding the lean premixed gas-fired combustion turbines under Subpart YYYY, which are operating without oxidation catalysts, and are subject to emission and operating limitations.

Based on the information provided by ANR, EPA makes the following findings:

- (1) ANR's petition clearly proposes to monitor the identified %NGP and T1 parameters, along with monitoring LPM.
- (2) ANR's discussion in its petition of the relationship between %NGP and T1, and formaldehyde emissions, and how limitations on these parameters will serve to limit formaldehyde emissions, is insufficient to support the requested parameters. The fact that a gas turbine is lean premix does not guarantee that it will meet the 91 ppbv formaldehyde standard. The August 16, 2022 and April 5, 2023 emissions testing conducted at the Sulphur Springs Compressor Station showed compliance with the formaldehyde standard within parts of the proposed ranges of %NGP and T1. The August 18, 2022 and April 3, 2023 emissions testing conducted at the LaGrange Compressor Station showed formaldehyde emissions below, or sometimes at exactly 91 ppbv within parts of the proposed ranges of %NGP and T1.
- (3) In a follow-up email on January 13, 2023, in response to EPA's request for additional information on January 12, 2023, ANR proposed upper and lower values for the %NGP and T1 parameters at both facilities (see table below). However, all four of the proposed T1 values are significantly out of the range of test conditions. The proposed %NGP values were sometimes out of the range of test conditions. ANR has not demonstrated that limiting operations to within the ranges of proposed values would ensure compliance.

Parameters:	Sulphur Springs (Solar Taurus 70)	LaGrange (Solar Mars 90)
ANR Proposed %NGP Limits	97.75 - 102%	90 - 105%
%NGP Test Conditions	97.7 - 99.2%	91.9 - 97.9%
Approved %NGP Limits	97.75 - 101.0%	90.0 - 99.5%
ANR Proposed T1 Limits (°F)	0-140	0-140
T1 Test Conditions (°F)	63-78	57-80
Approved T1 Limits (°F)	53-90	50-87

- (4) In follow-up emails on 12/20/22, 1/12/23, 1/23/23, 2/6/23, 2/14/23, and 3/14/23, ANR described the methods it would use to measure and the instruments it would use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments. ANR provided the manufacturer documentation requested by EPA.

(5) In follow-up emails on 12/20/22, 1/12/23, 1/23/23, 2/6/23, 2/14/23, and 3/14/23, ANR described the frequency and methods of instrument recalibration it would use. ANR provided the manufacturer documentation requested by EPA.

ANR has not demonstrated that limiting operations to within the full ranges of proposed values of the parameters %NGP and T1 at the Sulphur Springs facility would ensure compliance with the 91 ppbv formaldehyde emissions standard. EPA therefore approves the petition for the turbines to operate only between a T1 of 53.0-90.0 °F when the turbine is operating only between 97.75-101.0% NGP. EPA denies the petition for all other ranges.

ANR has not demonstrated that limiting operations to within the full ranges of proposed values of the parameters %NGP and T1 at the LaGrange facility would ensure compliance with the 91 ppbv formaldehyde emissions standard. EPA therefore approves the petition for the turbines to operate only between a T1 of 50.0-87.0 °F when the turbine is operating only between 90.0-99.5% NGP. EPA denies the petition for all other ranges.

EPA would consider updating the ranges if ANR provides information showing that the formaldehyde standard is met at wider ranges of operating conditions.

We have coordinated this determination with the Office of Enforcement and Compliance Assurance (OECA) and the Office of Air Quality Planning and Standards (OAQPS). If you have any further questions, please contact Jacob Herbers of my staff at [Herbers.Jacob@epa.gov](mailto:Herbers.Jacob@epa.gov).

Sincerely,

**MICHAEL  
HARRIS**

Digitally signed by  
MICHAEL HARRIS  
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Michael D. Harris  
Division Director  
Enforcement and Compliance Assurance Division

cc: Janusz Johnson, Chief  
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