Solar Turbines Incorporated

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RE: Oil and Natural Gas Regulation for Ozone Precursors
Title 20 Chapter 2 Part 50

Solar Turbines Incorporated (Solar) appreciates the opportunity to comment on the proposed oil and natural gas regulation for ozone precursors.

Solar is a manufacturer of industrial combustion turbines (1000-32,000 hp). Solar's fleet includes more than 16,000 combustion turbines over 100 countries. Our domestic fleet consists of over 8000 combustion turbines in power generation, pipeline compressor, and mechanical drive applications.

Solar asks that the New Mexico Environmental Department (NMED) consider the following comments. Solar asks that the agency contact us if more information is necessary to explain the comment. Solar has been in contact with several customers that are also preparing comments to the proposal, we also ask that the NMED also pay special attention to the comments prepared by these gas turbine users.

Summary of Comments

1. Solar Turbines asks that NMED delete the MMBtu/hr column in Table 2 with respect to the turbine rating ranges.
2. Solar Turbines recommends NMED remove all references to carbon monoxide (CO) from the proposed rule.
3. Solar Turbines recommends NMED adjust the NOx emission standard in the smallest turbine category in Table 2 to match 40CFR60 Subpart KKKK emission standards for <50 MMMBtu/hr modified or reconstructed units rather than use the Pennsylvania Department of Environmental Protection (PADEP) standard from GP-5.
4. Solar Turbines requests a compliance schedule for existing turbines similar that as proposed for reciprocating engines in 20.2.50.13 B(3) and/or that compliance be achieved at time of the next major overhaul.

Comment #1

Solar Turbines asks that NMED delete the MMBtu/hr column in Table 2 with respect to the turbine rating ranges.

In the first column of Table 2, NMED has 3 turbine rating categories delineated by bhp ranges. The second column has and equivalent MMBtu/hr rating to the bhp range. Solar requests that NMED remove column 2. MMBtu/hr as a **power rating** is not commonly used in the industry. MMBtu/hr is commonly used in the industry with respect to **fuel flow**. For example, a Taurus 60 7802S is 61.18 MMBtu/hr (LHV) at ISO. Solar is concerned the power rating reference could cause confusion and since it's redundant requests that it be removed or replaced with a MW reference.

Comment #2

Solar Turbines recommends NMED remove all references to CO from the proposed rule.

Sections 20.2.50.2 and 20.2.50.7 clearly state that the scope and objective of the Part is to establish emissions standards for ozone precursors, volatile organic compounds (VOC) and nitrogen oxides (NOx), in specific counties. As such, including emission standards, monitoring, recordkeeping, reporting, and testing requirements for CO should not be included in the rulemaking.

In the event that NMED does not remove all references to CO in this proposed ozone rule, Solar recommends a level of 50 ppm for existing sources and 25 ppm for new sources.

Comment #3

Solar Turbines recommends NMED adjust the NOx emission standard in the smallest turbine category in Table 2 to match 40CFR60 Subpart KKKK emission standards for <50 MMMBtu/hr modified or reconstructed units rather than use the Pennsylvania Department of Environmental Protection standard from GP-5.

NMED modeled the proposed ozone rule after Pennsylvania's GP-5 rule but did not adopt all of the applicability language with respect to existing sources. GP-5 does not impact pre-2013 units. In GP-5, units constructed on or after February 1, 2013, but prior to August 8, 2018 have to meet either 25 or 15 ppm NOx depending on their size. The NMED proposed rule impacts <u>all</u> existing units with no consideration for date of construction. Further background on the GP-5 rule development process is that there were no turbines in Pennsylvania in the 1000-5000 hp range installed on or after February 1, 2013, but prior to August 8, 2018 so no existing units were affected. As such, it did not come to light that the NOx emission standards in this size category are not technically achievable or commercially available from turbine manufacturers. Add-on control, specifically selective catalytic reduction, would be necessary to achieve the proposed standards on many vintage turbine units which do not have DLN capabilities.

Per the NOx standards proposed in the other size categories, the intent of the proposed NMED rule is for compliance to be achievable with dry low NOx combustion retrofits. The 25

ppm NOx level is not an appropriate standard for the 1000 to 5000 hp turbine category. [Note: In Comment #2 Solar requested the NMED remove all references to CO from the proposed rule. Should NMED not remove CO, Solar requests that the CO standard for the small source category be raised to 50 ppm @ 15% O2 to match what is technically achievable via manufacturer warranty for turbines in the 1000 to 5000 hp size category.]

At the time PADEP proposed GP-5, Solar and industry suggested PADEP follow the emission standards in 40CFR60 KKKK for the small turbine category but since there were no affected units in Pennsylvania, no changes were made to the GP-5 proposal. One of the primary reasons Solar and industry argued for the changes was for the very situation that is occurring now – precedent - should the rule be cut and pasted into another state rule without all the background and/or applicability language resulting in fatal flaws.

New Mexico has many existing turbines in the smallest category that will be unable to meet the proposed standard without add-on control. A higher emissions level, congruent with Subpart KKKK, will allow for DLN where it's available to be retrofit and allow the smaller turbines, for which DLN in not available, to continue to operate. Many, if not all, of the turbines that fall into this smallest category are Subpart GG (or pre-NSPS) turbines.

Comment #4

Solar Turbines requests a compliance schedule for existing turbines similar that as proposed for reciprocating engines in 20.2.50.13 B(3) and/or that compliance be achieved at the time of the next major overhaul.

The header in Table 2 suggests a 1-year compliance timeline for existing turbines. Solar requests that turbines be treated similarly to reciprocating engines and be given a schedule similar to that in section 20.2.50.13 B(3) and/or that compliance be achieved at the time of the next scheduled major overhaul. A 1-year timeline from the effective date of rule is unrealistic unless a major routine overhaul was already planned for that timeframe. To accommodate the emissions standards proposed in this rule it is anticipated, that in addition to a DLN retrofit at time of overhaul, upgrades to the package, control system, fuel system, and other ancillary systems will be necessary.

Please feel free to contact me at 858.694.6609 if you have any questions or need any additional information.

Sincerely,
Solar Turbines Incorporated
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