

Solar® Turbines

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Submitted Electronically

June 29, 2014

Environmental Quality Board
Rachel Carson State Office Building
400 Market Street
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Harrisburg, PA 17101-2301

RE: Comments to the Additional Reasonably Available Control Technology (RACT) Requirements for Major Sources of NOx and VOCs

Solar Turbines Incorporated (Solar) appreciates the opportunity to comment on the proposed additional RACT requirements for major sources of NOx and VOCs.

Solar is a manufacturer of industrial combustion turbines (1-22 MW). Solar's fleet includes more than 14,000 combustion turbines in 98 countries. Our domestic fleet consists of over 7000 combustion turbines in power generation, pipeline compressor, and mechanical drive applications.

Solar asks that the Pennsylvania Department of Environmental Protection (PADEP) consider the following comments. The main theme of our comments centers on suggested changes to the proposed rule language to reduce the need for case-by case RACT reviews.

Comments on Proposed Rulemaking

§129.97 (a)(1) & (a)(2)

For the units that will be impacted by the proposed RACT a 1-year compliance schedule is grossly inadequate. Especially in situations where a given company has multiple units that are RACT impacted. While an alternative compliance schedule can be obtained per the proposed rule, an extended compliance period would alleviate the need for virtually every impacted unit to go through the alternative RACT process. Solar suggests the PADEP consider language similar to the following for a phased-in compliance schedule. A phased-in compliance schedule will achieve the agency's goal of minimizing case-by-case RACT analyses with respect to the compliance schedule and allow industry the time to develop and implement the technology upgrades necessary to comply.

A. Owners or operators of all stationary sources subject to RACT shall submit an emissions control plan by _____ (insert date 12 months after effective date of rule).

B. All owners/operators shall demonstrate and maintain compliance with the applicable provision of this RACT in accordance with the following compliance schedules:

1. Operators with no more than two units shall demonstrate and maintain compliance by the earlier of the following dates:

- a. _____ (insert date 4 years after the effective date of rule)
- b. Within 90 days following the next major overhaul on or after _____ (insert date 18 months after the effective date of rule).

2. Operators with more than two units subject shall demonstrate and maintain compliance in accordance with the following compliance schedule:

- a. Within 90 days following the next major overhaul, any unit that is overhauled on or after _____ (insert date 18 months after the effective date of rule), and
- b. By _____ (insert date 30 months after the effective date of rule) at least 25% of the total number of units subject, and
- c. By _____ (insert date 42 months after the effective date of rule), at least 60% of the total number of units subject, and
- d. By _____ (insert date 54 months after the effective date of rule), 100% of the total number of units subject.

§129.97 (b)(1)

Please denote either HHV or LHV after the MMBtu/hr in the final rule. We assume the intent was HHV and base some of our other comments on such assumption.

§129.97 (b)(1)(ii) and (b)(1)(iii)

Solar suggests the PADEP reword conditions in section (ii). The reference to “flame pattern” is not applicable to all combustion sources. Solar has seen instances where such language has made its way into a combustion turbine permit rendering an irrelevant and impossible-to-comply-with permit condition. In addition, references to CO should be removed from a NOx and VOC rule.

(ii) Inspection and adjustment of ~~the flame pattern or~~ characteristics necessary to minimize total emissions of NOx and, ~~to the extent possible,~~ emissions of CO.

Solar suggests that PADEP delete (iii) or add wording to reference the combustion technologies that actively manage the air-to-fuel ratio. Solar has seen instances where such language has made its way into a combustion turbine permit rendering an irrelevant and impossible-to-comply-with permit condition.

(iii) ~~Inspection and adjustment of the air-to-fuel ratio control system necessary to ensure proper calibration and operation as specified by the manufacturer.~~

§129.97 (c)(2)

Solar suggests a combustion turbine threshold of <50 MMBtu/hr (HHV). Please refer to the EPA Docket for Subpart KKKK (OAR – 2004 – 0490) for documentation and discussion why a 50 MMBtu/hr (HHV) size threshold is appropriate for combustion turbines.

§129.97 (g)(2)(i) and (g)(2)(iii)

To alleviate the potential for numerous case-by-case RACT analyses, Solar recommends changing the 1000 hp trigger threshold to 50 MMBtu/hr (HHV) (reference EPA Docket OAR-2004-0490). The proposed RACT levels found in (g)(2)(i)(A) and (B) assume dry low NOx or water/steam injection emissions capabilities which are not commercially available on many combustion turbines <50 MMBtu/hr (HHV).

§129.97 (g)(2)(i)(A), (g)(2)(i)(C), (g)(2)(iii)(A), and (g)(2)(iii)(C)

What is a noncommercial gaseous fuel? A definition was not found in the regulation. Did the emission values proposed take into consideration the emissions capabilities of all gases that would fall into the “noncommercial gaseous fuel” category?

§129.97 (g)(2)(i)(B) and (g)(2)(iii)(B)

Solar suggests changing the fuel oil level to 96 ppm. The 96 ppm value is in line with 40 CFR 60 subpart KKKK for modified and reconstructed combustion turbines, or said another way, what older existing units are capable of with a DLN retrofit.

§129.97 (g)(2)(i)(C) and (g)(2)(i)(D)

Solar suggests for VOC a RACT requirement of “good engineering practices for the control of the VOC emission from the combustion unit or other combustion source”. If PADEP chooses to stay with a numerical limit, our recommendation, for the existing installed fleet of combustion sources, would be the 9 ppm VOC (as propane) level.

§129.97 (g)(3)

There appears to be some disparity between the combustion turbine and the reciprocating engine proposed requirements. The proposed combustion turbine level of 42 ppm on natural gas is ~four times lower than the RACT level for a lean burn reciprocating engine and ~two times lower than a rich burn engine. Uncontrolled combustion turbines are close to the proposed RACT levels for reciprocating engines. With reciprocating engines far outnumbering gas turbines in Pennsylvania does it make sense, from an environmental and/or cost impact basis, to have a RACT for combustion turbines, especially small combustion turbines? The RACT compliance cost analyses conducted by the agency is not detailed enough to determine if the RACT emissions level proposed for combustion turbines is cost effective.

§129.100 (b)

Refer to earlier comment regarding the need for extended compliance periods.

§129.100 (g)(4)

Solar requests that condition (4) be removed. At a minimum the CO emissions requirement should be removed as CO is not part of the proposed NOx and VOC RACT.

§129.100 (g)(5)

Solar requests that condition (5) be removed. If condition (5) is to remain, please add text to tie it to relevant combustion equipment, e.g. boilers. "Excess oxygen rate" is not a combustion turbine parameter.

Comments to Regulatory Analysis Form

Section (11)

The PADEP answer to the question posed in Section (11) was "no". Solar respectfully disagrees. While there is no specific federal presumptive RACT rule for combustion turbines, there is a NSPS for modified and reconstructed combustion turbines. The current NSPS is subpart KKKK. (Note: The applicable NSPS when the majority of the potential RACT impacted units were installed was subpart GG.) The emission values proposed in the RACT are stricter than the Subpart KKKK levels for modified/reconstructed units. The modified/reconstructed category is meant to represent "existing units", essentially the units impacted by the proposed RACT. The NSPS for modified/reconstructed combustion turbines is set at emissions levels that existing units are capable of meeting. To significantly reduce the number of case-by-case RACT reviews, the proposed RACT should heed the same size categories and emissions levels as the NSPS subpart KKKK.

Section (12)

PADEP states that, as proposed, the rulemaking would improve Pennsylvania's ability to compete by eliminating the time consuming and costly case-by-case RACT review process. Solar respectfully disagrees. Solar anticipates a case-by-case RACT review for every combustion turbine impacted. As drafted, the proposed RACT will result in a case-by-case RACT for compliance schedule for every gas turbine and a case-by-case RACT review for emissions level on the vast majority of impacted units.

Section (17)

The text states, "... Benefits to the department would include the minimization of case-by-case permit reviews and the associated demand on staff resources." As noted above, Solar respectfully disagrees with this statement.

Section (18)

This section contains a similar statement as referenced in Section (17). Solar respectfully disagrees.

Section (19)

The Department states, "...developing a precise estimate of compliance costs for the affected owner or operator is not possible..." Solar agrees with the agency based on the agency's presumptive RACT approach. A detailed source specific RACT cost estimate is imperative to assess the cost effectiveness of the proposed RACT on each combustion type and size categories with each type. Such an analysis would likely show significantly higher costs.

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

Sincerely,
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