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Environmental Quality Board
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ENVIRONMENTAL QUALITY BOARD

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Subject: Comments on Proposed Rulemaking: Additional RACT Requirements for Major Sources of NOx and VOCs



Dear Sirs:

The Boeing Company - Philadelphia (Boeing) takes this opportunity to submit the following comments on Proposed Rulemaking: Additional RACT Requirements for Major Sources of NOx and VOCs (44 Pa.B. 2392; April 19, 2014).

1. 25 Pa. Code § 129.100(a)(2) would require a stack test to demonstrate compliance with the NOx emission limit established by § 129.97(g) for Boeing's Nebraska-1 Boiler firing both natural gas and No. 2 distillate oil.

Boeing requests aligning the testing of Boeing's Nebraska-1 Boiler with existing Title V operating permit test conditions.

This boiler has already been stack tested to demonstrate compliance with the more stringent (especially for the primary fuel of natural gas) concentration permit limits of 90 ppm_{dv} @ 3% O₂ for No. 2 oil and 30 ppm_{dv} @ 3% O₂ for natural gas established by PA DEP as best available technology (BAT). Not only were initial stack tests conducted after startup, but as per the existing permit conditions, another stack test was conducted prior to expiration of the Title V operating permit in January 2013. Requiring additional stack testing of this boiler is duplicative of existing stack testing requirements, adds significant cost, and will generate unnecessary emissions. PA DEP should therefore avoid unnecessary stack testing of such units by modifying its proposal to allow reliance on equivalent stack testing performed in accordance with other requirements.

The cost for stack testing with both fuels is approximately \$20-25,000, which is unnecessary given that equivalent stack testing has been performed per other requirements. Moreover, because a test date must be selected in advance, the outside temperature may be high enough that operating the boilers at full load may be difficult, wasteful of fuel and water resources, generating unnecessary pollutants and potentially harmful to the boiler.

When the boiler must be operated in an attempt to operate at full load despite less than frigid temperatures, the excess steam generated must be vented to the atmosphere. In addition to the wasteful use of fuel and the resultant generation of emissions, the venting of most of the steam produced requires the supply of water in excess of the boiler design. (Since the design is based on the reuse of condensate from the returned steam, the makeup water requirements are drastically increased when most of the generated steam is vented rather than returned.) Thus, the makeup water requirements are in excess of the design

capacity and untreated water must be used to provide water at the required makeup rate. This presents a danger to the boiler since the untreated water may clog tubes or otherwise damage the boiler. In addition, the use of boiler water primarily comprised of cold makeup water from the City water supply rather than warm condensate results in atypical boiler operation. Although the regulation allows the use of a stack test within 12 months of the effective date of the regulation, that provision of this regulation would be of no help regarding this boiler since the most recent test will not be within the allowable time window by the time the regulation is finalized, promulgated and implemented. Yet despite this waste of resources and the many potentially deleterious effects, there would be no real environmental benefit to further testing.

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As an alternative to stack testing, PA DEP could consider reliance on tune-ups, such as those required for smaller boilers, that will affect the operation of the boiler across its full range of operation under typical conditions. In fact, Boeing's Nebraska-1 Boiler is a Gas 1 boiler subject to the Boiler MACT of 40 CFR 63, Subpart DDDDD, which requires regular tune-ups. In the case of a Gas 1 boiler with a continuous oxygen trim system such as the Nebraska-1 Boiler, the Boiler MACT only requires a tune-up every 5 years because a modern boiler equipped with oxygen trim is able to maintain its operating and emissions performance. In addition, testing when firing oil would consume about 6 hours of the allowable 48 hours per calendar year of non-curtailed firing for a Gas-1 boiler under the Boiler MACT.

2. **25 Pa. Code § 129.97(b)(1) would require an annual tune-up to demonstrate compliance for smaller boilers.**

Boeing requests alignment of the boiler tune-up frequency with the Boiler MACT for Gas 1 boilers with boiler controls which incorporate oxygen trim.

The other six boilers at the Boeing facility are between 20 and 50 MMBtu/hr and, therefore, would be subject to the presumptive RACT requirement of an annual tune-up. However, although some of these boilers have been subject to permit conditions requiring an annual tune-up, they too are subject to the Boiler MACT as Gas 1 boilers with oxygen trim systems that are recognized as requiring a tune-up only every five years. PA DEP should not require tune-up frequencies more stringent than the MACT and should allow MACT affected sources to comply with the MACT tune-up standard in lieu of the proposed RACT requirements.

3. **The document cited in § 129.97(b)(2) as providing guidance on tune-ups does not mention "NO_x" or "VOC" or how to reduce its emissions, instead it focuses on increasing combustion efficiency, which generally but not always minimizes NO_x emissions.**

Boeing is unclear on the use of referenced document for compliance.

The document was developed to address 1983 and earlier boiler designs, not modern boilers and control systems. In addition, the cited document, "Combustion Efficiency Optimization Manual for Operators of Oil and Gas-fired Boilers," is not readily available on the PA DEP or EPA websites.

4. **The preamble to the proposed rulemaking states at the end of Section F, "The proposed rulemaking will not increase the paperwork that is already generated during the normal course of business operation."**

Boeing requests that the agency minimize the paperwork for both the major source and the PA DEP.

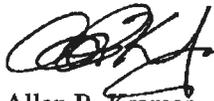
The submission of a test protocol and test report for Boeing's Nebraska-1 boiler will be extra paperwork four years out of five. Also, the limit in lb/MMBtu rather than concentration requires additional calculations and results that must be reported (and possible additional measurements of flow rate). If the internal combustion engines were not all emergency standby engines operating less than 500 hr/yr and, thus, exempt from emission limitations (per § 129.97(c)(6)), the entire stack testing effort that would be required would be an extra effort with substantial reporting. Regardless, the additional RACT 2 requirements will have to be incorporated into the Title V Operating Permit, which will take additional effort on both Boeing's and PA DEP's parts.

5. **Good engineering practice referenced in the proposed 25 Pa. Code § 129.97(c) is not defined in the regulation and, therefore, is not readily implemented.**

Boeing requests a list of presumptive good engineering practices for boilers to control NOx and VOC emissions.

Boeing appreciates your consideration of these comments. Please contact me at 610-591-3197 or Timothy Titus at 610-591-3919 / timothy.j.titus@boeing.com / MC P29-14 for any questions or if you require additional information.

Sincerely,



Allen R. Kramer
Manager, Environment, Health & Safety

Enclosures
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