From:	NMOAI, NMENV
To:	Spillers, Robert, NMENV
Subject:	Fw: Comments on proposed Oil and Natural Gas Regulation for Ozone Precursors
Date:	Thursday, September 17, 2020 7:37:56 AM
Attachments:	image003.png INNIO Waukesha Comments to New Mexico Environment Department.pdf

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From: Zurlo, James (INNIO) <James.Zurlo@innio.com>
Sent: Friday, September 11, 2020 11:11 AM
To: NMOAI, NMENV
Subject: [EXT] Comments on proposed Oil and Natural Gas Regulation for Ozone Precursors

Please see attached comments from INNIO Waukesha Gas Engines on the proposed Oil and Natural Gas Regulation for Ozone Precursors.

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September 11, 2020

Dear Sir,
I am writing you on behalf of the INNIO Waukesha Gas Engines (Waukesha) business to submit comments on the proposed Oil and Natural Gas Regulation for Ozone Precursors.[1] Waukesha supports Governor Michelle Lujan Grisham's executive order to reduce greenhouse gas emissions by 45% by 2030. Waukesha's rich burn technology has the lowest NOx, VOC, and Methane emissions of any gas compression engine. A typical ~1900 bhp lean burn engine will release up to 69 tons/year of Methane, while the Waukesha 7044 GSI Series Five rich burn engine will release only 5 tons/year of Methane.[2]

The release of 69 tons/year of Methane from the lean burn engine increases the CO2e emissions to 11% more than the Waukesha 7044 GSI Series Five rich burn engine.

Engine Model	Methane (tpy)	NOx (tpy)	VOC (tpy)	CO (tpy)
Waukesha 7044GSI S5	5	2.8	0.15	5.5
~1900 bhp lean burn	69	5.5	5.5	1.8

The proposed Oil and Natural Gas Regulation for Ozone Precursors emission reductions for new engines are significantly lower than EPA NSPS levels. The table below shows the EPA NSPS levels and the percentage reduction of the proposed levels for large new engines over the EPA NSPS levels.

[1] „Draft-Ozone-Precursor-Rule-for-Oil-and-Natural-Gas-Sector-Version-Date-7.20.20.pdf" downloaded from New Mexico Environment Department website
[2] Assuming 5% Propane in the fuel gas and 3.83 g/bhp-hr CH4 emissions from the lean burn engine, 0.27 g/bhp-hr CH4 emissions from the Waukesha 7044 GSI Series Five engine, and 8760 hours of operation per year.

Regulation	NOx	CO	VOC
EPA NSPS Limits (g/bhp-hr)	1	2	0.7
Lean Burn > 2370 bhp	70%	88%	57%
Rich Burn > 500 bhp	80%	85%	71%

However, since the goal of this regulation is to reduce ground level Ozone precursors (NOx & VOC) and Methane emissions, the larger percentage reduction for Carbon Monoxide (CO) compared to NOx and VOC reduction is puzzling. Carbon Monoxide does not contribute to ground level Ozone, and is a very minor contributor to GHG emissions. Waukesha proposes a CO level of 0.5 g/bhp-hr for both new and existing lean and rich burn engines which will not adversely affect the goals of this proposed regulation and still would be a 75% reduction over the current EPA NSPS Carbon Monoxide level.

Additionally, Waukesha representatives joined the August 6th listening session and heard multiple references to the desire for regulations to be technology-agnostic; based on how different the NOx and VOC emissions are between a rich burn and a lean burn engine (as shown in this letter), would it not make sense to set one set of targets for a natural gas powered engine and allow customers to choose the technology based on what best meets that regulation?

Waukesha would be very happy to discuss details of this via teleconference if there is mutual interest from the NMED. Thanks for allowing us the opportunity to share our perspective.

Yours Sincerely,

Jim Zurlo
Consulting Engineer
INNIO Waukesha Gas Engines