



# PA Chamber of Business and Industry DEP Quarterly Meeting

## **Control of VOC Emissions from the Oil and Natural Gas Industry**

May 15, 2019

Tom Wolf, Governor

Patrick McDonnell, Secretary

# Background for VOC RACT Rule

- On October 27, 2016, EPA issued the Control Techniques Guidelines (CTG) for the Oil and Natural Gas Industry for emissions of VOC from existing sources.
- DEP is required to submit a revision to Pennsylvania's State Implementation Plan in the form of regulations to address VOC RACT requirements for sources in the Oil and Gas Industry within two years of the CTG's issuance.
- EPA has established an implementation deadline of January 1, 2021.

# EPA'S Withdrawal Request Of CTG

- On March 9, 2018, EPA requested public comment on a potential withdrawal of the CTG because it relied upon data and conclusions made in the 2016 New Source Performance Standards that is currently under reconsideration.
- DEP expressed opposition to EPA for the comprehensive withdrawal of the CTG.
- Despite EPA's proposed withdrawal of CTG, DEP intends to develop the regulations for existing sources at natural gas and oil sector with due consideration of the proposed changes.

# Sources Covered

- Storage Vessels
- Natural Gas-Driven Pneumatic Controllers
- Natural Gas-Driven Diaphragm Pumps
- Reciprocating and Centrifugal Compressors
- Fugitive Emissions Components (Equipment Leaks)

# Storage Vessels

- Storage vessels at conventional well sites regardless of date of installation or at unconventional well sites installed prior to Aug 10, 2013 require 95% control if the potential to emit is greater than 6 TPY VOC based on the maximum average daily throughput unless actual emissions without control are less than 4 TPY VOC, as determined monthly, for 12 consecutive months.
- Storage vessels at unconventional well sites installed on or after August 10, 2013, at natural gas gathering or boosting stations, at natural gas processing plants, or in the natural gas transmission or storage segment require 95% control if the potential to emit is greater than 2.7 TPY VOC based on the maximum average daily throughput unless actual emissions without control are less than 2.7 TPY VOC, as determined monthly, for 12 consecutive months.

# ▶ Natural Gas-driven Pneumatic Controllers

- Natural gas-driven pneumatic controllers at natural gas processing plants must have a bleed rate of zero standard cubic feet per hour (scfh).
- Natural gas-driven pneumatic controllers from the wellhead to the natural gas processing plant or point of custody transfer must have a bleed rate  $\leq 6$  scfh.
- In both cases, exceptions may be made based on functional needs including, but not limited to, response time, safety and positive actuation that require higher bleed rate.

# ➤ Natural Gas-driven Diaphragm Pumps

- Natural gas-driven diaphragm pumps at a natural gas processing plant must have zero VOC emissions.
- Natural gas-driven diaphragm pumps at a well site requires routing of VOC emissions from the pump to an existing onsite control device or process that achieves 95% control.
  - If the existing control device or process cannot achieve 95% control, the operator must maintain documentation demonstrating the percent reduction that the control device or process is designed to achieve.
  - If there is no existing control device or process, or if it is technically infeasible to route the pump emissions to an existing control device or process, the operator must maintain the appropriate records.

# Reciprocating Compressors

- Reciprocating compressors located between the wellhead and point of custody transfer to the natural gas transmission and storage segment must reduce VOC emissions by replacing the reciprocating compressor rod packing on or before 26,000 hours of operation or 36 months since the most recent rod packing replacement. Alternatively, rod packing emissions may be routed to a process through a closed vent system under negative pressure.
- RACT doesn't apply to reciprocating compressors located at a well site, or an adjacent well site and servicing more than one well site.

# Centrifugal Compressors

- Centrifugal compressors using wet seals located between the wellhead and point of custody transfer to the natural gas transmission and storage segment must reduce VOC emissions from each centrifugal compressor wet seal fluid gassing system by 95%.
- RACT doesn't apply to a centrifugal compressor using wet seals located at a well site, or an adjacent well site and serving more than one well site or to a centrifugal compressor using dry seals.

# Fugitive Emissions Components

- Fugitive emissions components within a company-defined area at well sites with wells that produce, on average, > 15 barrel of oil equivalents per well and with a gas-to-oil ratio (GOR)  $\geq 300$  scf/barrel; at natural gas gathering and boosting stations; and natural gas processing plants must be inspected monthly using an audible, visual, and olfactory inspection and quarterly using an instrument-based inspection.
- The instrument-based inspection can be either an optical gas imaging (OGI) camera, a Method 21 gas leak detector, or a DEP approved alternative method.

# ▶ Leaks (Equipment Leaks & Fugitive Emissions)

- The leak definition for an OGI inspection is any visible emission and for a Method 21 inspection is 500 ppm as methane.
- For fugitive emissions components at an applicable well site, the frequency of the instrument based inspection can be adjusted based on the results of previous inspections.
  - If the percentage of leaking fugitive emissions components in two consecutive quarterly inspections is less than 2%, the frequency can be dropped to semiannual.
  - If the percentage of leaking fugitive emissions components in any semiannual inspection is greater than or equal to 2%, the frequency returns to quarterly.

# Questions?

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