

Oil and Gas Emissions Reduction Strategies

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Introduction

- Eliminate or modify Regulation 3 APEN reporting and permit exemptions for source categories deemed significant.
- Modify requirements for currently regulated source categories to make more stringent.
- Establish new regulations for previously unregulated source categories.
- Other Considerations.

Eliminate APEN Reporting and Permit Exemptions

- Re-evaluate existing oil and gas industry exemptions to determine significance.
- Eliminate or modify exemptions if appropriate.

Example Exemptions

- Internal combustion engines on drill rigs.
- Crude oil truck loading.
- Crude oil storage tanks.
- Well drilling, workovers and completion emissions.
- Stationary RICE.
- Small Heater treaters / Separators / Reboilers.
- Condensate tanks with production 730 BBL/year or less.

Modify Requirements for Currently Regulated Source Categories

- Expand Leak Detection and Repair (LDAR) requirements.
- Increase emissions reduction requirements for:
 - Condensate storage tanks.
 - Glycol dehydrators.
 - Reciprocating Internal Combustion Engines.

Leak Detection and Repair (LDAR)

- LDAR currently required at gas plants in the 8-hr ozone control area.
- Require LDAR at compressor stations and/or E&P sites in 8-hr ozone control area.
- Lower the “leak” definition threshold to less than 10,000 ppm to trigger repairs sooner.
- Consider optical imaging leak detection programs.

Condensate Tank Emissions Control

- Eliminate 730 BBL/yr (~5 TPY VOC) categorical APEN exemption.
 - This would effectively reduce the APEN reporting threshold to 1 TPY VOC and subject these smaller tanks to the company wide 75% control requirement.
- Increase 75% company wide condensate tank control requirements to 95%.

Condensate Tank Emissions Control

- Simplify record keeping and reporting intense company wide control program to:
 - All condensate tank batteries with actual uncontrolled emissions greater than or equal to 5 TPY VOC are required to install controls meeting 95% efficiency.

Dehydrator Emission Controls

- Currently dehydrators with 15 TPY VOC or greater are required to reduce emissions by 90%.
- Reduce dehydrator emissions control applicability threshold from 15 TPY VOC to 2 TPY VOC.
- Increase 90% emissions control requirement to 98%.

Dehydrator Emission Controls

- Require optimization of lean glycol circulation rates on dehydrators not subject to 90% control.
- Require installation of flash tank separators on new dehydration units.
- Require desiccant dehydrators.

Engine Emissions Control

- Currently non-selective catalytic reduction (NSCR) for rich burn engines and oxidation catalyst for lean burn engines greater than 500 HP is required in 8-hr ozone control area.
- Consider applying these control requirements statewide or to smaller engines.

Establish New Regulations

- Evaluate emissions from previously unregulated source categories to determine significance.
- APCD coordinating with industry to facilitate this process.
- Require emission reductions from source categories deemed significant where control costs are reasonable.

Example Source Categories

- Pneumatic actuated devices.
- Well drilling completion emissions.
- Tank truck load out operations.
- Water tanks.

Pneumatic Devices

- Require installation of low/no-bleed pneumatic actuated controls at all new E&P sites.
- Require retrofit installation of low/no-bleed pneumatic actuated controls when maintenance of existing controls are performed.

Pneumatic Devices

- Require pneumatic discharge lines to be routed into fuel gas supply lines or a closed loop controlled system.
- Require new compressor stations and gas plants to use instrument air systems.
- Require use of electric/solar pumps.

Well Completions

- Require use of equipment to capture natural gas and VOCs through well-drilling completion activities (aka Green Completions).
 - Reduce flaring/venting of well completion emissions.
 - Practical for infill areas where natural gas gathering lines exist.
- May be addressed through permit to drill process through the COGCC (HB 1341 Regulations).

Tank Truck Loadout

- Require transport trucks and condensate storage tanks to be designed with vapor recycle lines.
- Require loading operations to occur with vapor balance to minimize vapor displacement emissions that occur during truck loading.

Water Tanks

- Require closed top produced water tanks.
- Require water tank head space to be tied in with existing combustion controls where already available.

Other Considerations

- Statewide presumptive BACT program to streamline industry and APCD interaction while minimizing emissions.
- Industry Funding of Clean Air Initiatives.
 - Cash for clunkers program.
 - Lawn mower/equipment trade-out programs.
 - Diesel school bus retrofits.

Conclusion

- APCD is currently in the process of identifying and evaluating emission sources.
- Source categories with the most significant impact will be further evaluated for regulation.