

# Implementation of California Air Resources Board's Methane Regulation Affecting the Oil and Gas Industry

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# Regulatory Background

- June 2005 – Then-Gov. Schwarzenegger signed Executive Order targeting GHG emissions and establishing timeline for statewide GHG emission reductions
- Sept. 2006 – Legislature passed and then-Gov. Schwarzenegger signed Assembly Bill 32, California Global Warming Solutions Act of 2006 (F. Nunez, Chapter 488, Statutes of 2006)
  - Bill required that CARB establish incremental statewide GHG emission caps and develop scoping plan for reducing GHG emissions via regulatory and market-based mechanisms
  - Scoping plan called for regulation of methane emissions associated with oil and gas industry as necessary means of achieving state’s GHG emission reduction goals

# Regulatory Background (cont.)

- March 2017 – CARB’s Board adopted Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (CA Oil and Gas Regulation, or COGR) to implement AB 32 requirements
- July 2017 – COGR approved by CARB’s Office of Administrative Law
- Codified at 17 CCR §§ 95666–95677

# COGR Requirements

- § 95666 establishes applicability of regulation
  - Regardless of emission level, affected facilities include:
    - Onshore and offshore crude oil or natural gas production
    - Crude oil, condensate, and produced water separation and storage
    - Natural gas underground storage
    - Natural gas gathering and boosting stations
    - Natural gas processing plants
    - Natural gas transmission compressor stations
  - Facilities in sectors not listed above are not subject to rule
  - There are no exemptions that apply categorically to entirety of rule; only section-level exemptions
- § 95667 establishes relevant definitions

# COGR Requirements (cont.)

- § 95668 establishes standards for regulated equipment
  - Separator and Tank Systems
    - Monitoring (flash testing), reporting, poss. V/R
    - Key exemption: throughput <50 bbl-oil/condensate per day, <200 bbl-produced water per day
  - Circulation Tanks for Well Stimulation Treatments
    - Reporting (technology assessment), poss. V/R
  - Reciprocating Natural Gas Compressors
    - Monitoring (flow rate and LDAR), reporting, rod packing/seal flow rate standards and leak concentration standards
  - Centrifugal Natural Gas Compressors
    - Monitoring (flow rate and LDAR), reporting, wet seal flow rate standards and leak concentration standards

# COGR Requirements (cont.)

- § 95668 establishes standards for regulated equipment
  - Natural Gas Powered Pneumatic Devices and Pumps
    - Monitoring (flow rate and LDAR), reporting, flow rate and leak concentration standards, retrofit/replacement requirements for certain continuous-bleed control valves
  - Liquids Unloading of Natural Gas Wells
    - Monitoring (volumetric flow), reporting, poss. V/R
  - Well Casing Vents
    - Monitoring (volumetric flow), reporting, **no flow rate or leak standards**
  - Natural Gas Underground Storage Facilities
    - Monitoring plan (continuous upwind and downwind methane emission monitoring, daily or continuous wellhead leak screening, blowout provisions)

# COGR Requirements (cont.)

- § 95669 establishes LDAR requirements
  - Discussed in greater depth later
- § 95670 establishes mechanism by which affected facilities may designate certain components as “critical” in order to enjoy extended repair times (beyond those in § 95669)
  - A critical **process unit** is one that “must remain in service because of its importance to the overall process that requires it to continue to operate, and has no equivalent equipment to replace it or cannot be bypassed, and it is technically infeasible to repair leaks from that process unit without shutting it down and opening the process unit to the atmosphere”
  - A critical **component** is one that “would require the shutdown of a critical process unit if that component was shutdown or disabled”
  - Approved critical components found to be leaking must be repaired upon turnaround or within 12 months, whichever is sooner
  - Separate provisions for components that are **temporarily critical to reliable public gas system operation**
  - Per Memorandum of Agreement (MOA) with CARB, SJVAPCD reviews all critical component requests and provides guidance to CARB on approvability of such requests

# COGR Requirements (cont.)

- § 95671 establishes standards for V/R systems that are required to operate per a provision in § 95668
  - Requires 95% VOC control efficiency and, for non-attainment districts, limits increase in NO<sub>x</sub> emissions (establishes max. NO<sub>x</sub> concentration for VOC control devices of 15 ppmv @ 3% O<sub>2</sub>)
- § 95672 establishes recordkeeping requirements
- § 95673 establishes reporting requirements
- § 95674 provides for implementation of regulation by CARB and local districts; establishes authority for local permitting/registration program
- § 95675 provides for and clarifies local enforceability of regulation
- § 95676 clarifies that COGR does not preempt any more stringent local or federal regulatory requirements
- § 95677 clarifies severability of each part of regulation
- Appendices include recordkeeping/reporting forms and flash testing procedure



# LDAR Requirements

- § 95669 establishes LDAR requirements
- Effective January 1, 2018, all subject components were to be inspected and, if necessary, repaired according to applicable timeframe
  - Inspect components audio-visually daily (at sites visited daily) or weekly (at sites not visited daily), with the exception of unsafe-to-monitor and inaccessible components, which must be inspected annually; inspect pipes annually
  - Leaks detected via audio-visual inspection must be repaired or inspected in accordance with EPA Method 21 (M21) within 24 hours (by end of next business day if detected after hours, on a weekend, or on a holiday)
  - Leaks detected via M21 must be repaired pursuant to applicable timeframe in rule

# LDAR Requirements (cont.)

- Effective January 1, 2018, all subject components were to be inspected and, if necessary, repaired according to applicable timeframe
  - Inspect components on a quarterly basis using M21, with the exception of unsafe-to-monitor and inaccessible components, which must be inspected annually
  - M21-compliant analyzers include those utilizing catalytic oxidation sensors and flame-ionization detectors, but not photoionization detectors
  - Optical Gas Imaging (such as FLIR camera) may be used as screening device, **but not in lieu of M21**
    - Leaks detected by OGI must be inspected via M21 within 2 calendar days of detection (14 calendar days for unsafe-to-monitor or inaccessible components)
  - Leaks detected via M21 must be repaired within applicable timeframe in rule

# LDAR Requirements (cont.)

- Key exemptions:
  - Components subject to a local district's LDAR program (in SJVAPCD, Rules 4401, 4409, 4455, and 4623) as of January 1, 2018
    - Exemption extends to components subject to an NSR LDAR requirement that is incorporated into the facility's preconstruction/operating permit
    - Exemption does not extend to other agencies' LDAR requirements
    - Components that are subject to a local rule with an LDAR requirement, but that are exempted by that rule from the LDAR requirement, **are subject to COGR LDAR**

# LDAR Requirements (cont.)

- Key exemptions:
  - Components used exclusively for production of crude oil with API gravity  $<20^\circ$ 
    - This exemption is extended to components handling produced water, but not to components in gaseous service (with exception of tank-top components)
  - Buried components
    - This exemption does not include well casings
  - Open casing vents
  - Closed casing vents serving wells with API gravity  $<20^\circ$
  - No throughput-based exemptions from COGR LDAR

# LDAR Requirements (cont.)

**Table 1 - Allowable Number of Leaks  
January 1, 2018 through December 31, 2019**

<b>Leak Threshold</b>	<b>200 or Less Components</b>	<b>More than 200 Components</b>
10,000-49,999 ppmv	5	2% of total inspected
50,000 ppmv or greater	2	1% of total inspected

**Table 2 - Repair Time Periods  
January 1, 2018 through December 31, 2019**

<b>Leak Threshold</b>	<b>Repair Time Period</b>
10,000-49,999 ppmv	14 calendar days
50,000 ppmv or greater	5 calendar days
Critical Components and Critical Process Units	Next scheduled shutdown or within 12 months, whichever is sooner

Tagged leaks found during District inspection are not included in District's component count  
OELs must be repaired within 14 days

# LDAR Requirements (cont.)

**Table 3 - Allowable Number of Leaks  
On or After January 1, 2020**

Leak Threshold	200 or Less Components	More than 200 Components
1,000-9,999 ppmv	5	2% of total inspected
10,000-49,999 ppmv	2	1% of total inspected
50,000 ppmv or greater	0	0

**Table 4 - Repair Time Periods  
On or After January 1, 2020**

Leak Threshold	Repair Time Period
1,000-9,999 ppmv	14 calendar days
10,000-49,999 ppmv	5 calendar days
50,000 ppmv or greater	2 calendar days
Critical Components and Critical Process Units	Next scheduled shutdown or within 12 months, whichever is sooner

Tagged leaks found during District inspection are not included in District's component count  
OELs must be repaired within 14 days

# LDAR Requirements (cont.)

- Per guidance from CARB, District will not enforce allowable number of leaks found during **operator inspection**, even during fourth quarter
  - Will enforce repair times
- District will enforce allowable number of leaks found during **District inspection**, including repair time provisions

# Principles of District Implementation

- Actively participated in CARB's rulemaking
- CARB and stakeholders agreed that District would be better able to implement regulation
  - District staff already familiar with affected facilities and regulated equipment
  - District implementation would result in more effective and expeditious implementation
  - Utilized District's existing permitting and enforcement infrastructure
- Developed rules in consultation with CARB and affected stakeholders through robust public process
- Provided compliance assistance and education to affected stakeholders
  - Compliance Assistance Bulletin, regulation guidance for industry
  - Group and individual company trainings
- Maintained high degree of customer service
- Utilized all available streamlining and efficiency measures while providing for full compliance and effective implementation



# Local Rulemakings

- December 2017 – District’s Governing Board adopted Rules 2260 and 3156 and signed MOA with CARB to implement COGR locally
  - Rule 2260 establishes registration mechanism for equipment subject to COGR
  - Rule 3156 establishes fee schedule, to be used only if CARB does not adequately fund District’s inspection program
    - Thus far, state budgets have included adequate appropriations for costs associated with initial/ongoing implementation of COGR

# Rule 2260 Requirements

- Registration of regulated equipment
  - Distinct from District’s permitting program
  - CARB-developed registration application provided to stakeholders in spreadsheet format
  - Initial application was due by March 1, 2018
  - Application required within 30 days of addition of any new regulated equipment
- Inventory of regulated equipment
  - Required by both COGR and Rule 2260
  - Same spreadsheet format as CARB-developed registration application
  - May be submitted concurrently with initial registration application
  - Initial inventory was due July 1, 2018
  - Updates due annually by March 1

# District's COGR Inspections

- 70–80% of affected facilities throughout state are located in SJVAPCD
- Many, but not all, affected facilities are already subject to local VOC rules
- Purpose of inspections is to determine compliance with COGR requirements
- Inspections include the following elements:
  - Verification that required reports were submitted (office-based)
  - Record review (monitoring, LDAR, test results)
  - Physical inspection of equipment subject to regulation
    - Survey for leaks per M21 and utilizing OGI using Forward Looking Infrared cameras
  - To implement COGR as efficiently as possible, these inspections coincide whenever feasible with affected facility's stationary source inspection

# Questions?

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