Scoping Meeting to Discuss Potential Amendments to Rule 4311(Flares)

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Purpose of Meeting

- Initiate public process for rulemaking and engage stakeholders
- Provide background on flares
- Review current District flare requirements
- Review completed further studies
- Review commitment to amend Rule 4311
- Review flare minimization practices
- Review flare control technologies
- Identify next steps
Background

• Flares serve two basic functions
  – Emission control device for VOC emissions
  – Safety device during unforeseeable and unpreventable emergency situations

• Utilized by diverse group of industries
  – Oil and gas production
  – Petroleum refining
  – Natural gas processing
  – Natural gas transmission
  – Wastewater treatment (wastewater treatment plants, cheese production, wineries, dairy, beef packer)
  – Miscellaneous (correctional facility, flat glass manufacturer)

• The majority of Valley flares are standby or emergency flares
  – Standby: utilized to dispose of gas during maintenance or periods when gas cannot be disposed of through normal means
  – Emergency: only used during unforeseeable and unpreventable emergency situations
District Flare Requirements

- District Rule 4311 adopted June 2002 and amended in 2009 to add a number of new requirements, including annual reporting and flare minimization practices
  - NOx limit as low as 0.068 lb-NOx/MMBtu (53 ppmv NOx)
  - Proper operation (i.e., ignition system, heat sensors, etc.)
  - Flare minimization plans
  - Reporting of unplanned flaring event within 24 hours
  - Vent gas composition monitoring
  - Reporting of monitoring system in operation
  - Alternate methods of monitoring
  - Video monitoring
  - Most stringent rule compared to other regions (North Dakota, Santa Barbara, etc.)
Further Studies Completed

• 2014 Further Study
  – Commitment in 2012 PM2.5 Plan and 2013 Plan Ozone
  – Operators of flares in Valley subject to most stringent requirements and were implementing alternatives and committing to activities that reduce flaring

• 2015 Further Study
  – Commitment in 2015 PM2.5 Plan
  – Reviewed flare minimization practices and technology
  – Ultra low NOx technologies with potential to further reduce emissions from flaring have recently become available requiring further feasibility evaluation
  – District identified minimization practices currently performed at facilities that have the potential to be applied to other facilities
Need for Further Reductions

• Enormous reductions needed to demonstrate attainment with latest federal ozone and PM2.5 standards
  – District has committed to leave no stone unturned
• Latest flare further study found potential additional flare minimization practices and new ultra-low NOx technologies
• District committed in 2016 Ozone Plan to work closely with affected operators to undergo regulatory amendment process for Rule 4311 to:
  – Include additional flare minimization requirements, where technologically achievable and economically feasible
  – Include additional ultra-low NOx flare emission limitations for existing and new flaring activities at Valley facilities, where technologically achievable and economically feasible
• District in process of developing attainment strategy to address multiple federal PM2.5 standards
• State recently adopted oil/gas greenhouse gas emission regulations will result in increased flaring activities and emissions (will require 15 ppmv NOx by 2019)
Potential Flare Minimization Practices

• Alternatives to flaring
  – Use gas as a fuel for equipment rather than flaring
  – Send oilfield gas to a sales gas line or compress and transport

• Maintenance and testing
  – Install high-pressure alarms on process vessels
  – Inspect pressure relief valves routinely to ensure proper operation

• Reduction in flaring during maintenance and shutdowns
  – Perform maintenance on one area without impacting other operations on site
  – Curtail oil/gas production during planned shutdown of sales line
  – Gas storage systems

• Redundant systems
  – Redundant compressors
  – Redundant digester gas-fired turbines

• Procedures to prevent/mitigate flaring due to power outages
  – Backup generators
  – Power outage alarm
Potential Flare Minimization Practices (cont’d)

• Questions/issues to be addressed
  – Technical feasibility of implementing flare minimization practices by various sources/processes
  – Economic feasibility of each flare minimization practice
  – Other potential minimization practices not yet identified
New Ultra-Low NOx Flare Technologies

• District has conducted preliminary research on potential ultra-low NOx flaring or alternative incineration technologies:
  – Aereon Certified Ultra-Low Emissions Burner (installations in Santa Barbara APCD, source tested below 8 ppmv)
  – Coyote VOC Destruction Device (installations in San Joaquin Valley, manufacturer claim 20 ppmv)
  – John Zink “ZULE” enclosed ground flare (installations at landfills, source tested at 12 ppmv)
  – ClearSign Duplex Technology (manufacturer claim 15 ppmv)
Ultra-Low NOx Flare Technologies (cont’d)

• Questions/issues to be addressed
  – Identification of sources that technology can be applied to
  – Additional infrastructure needs (e.g., electricity, gas treatment, etc.)
  – Ability to handle large volume of gas
  – Ability to address large fluctuations in gas flowrate
  – Ability to handle gas with low or high heating value
  – Reliability
  – Cost feasibility
  – Other technologies not yet identified
Next Steps

• Hold focus workgroup meetings to evaluate and discuss flare minimization practices (September/October 2017)
• Evaluate ultra-low NOx flare technologies and cost effectiveness
• Develop draft staff report
• Develop draft amended rule
• Hold public workshop (October/November 2017)
• Finalize staff report
• Finalize amended rule
• Adopt rule at Board hearing (late 2017/early 2018)
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Open Discussion

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