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 inoperation
  - 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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