Oil & Natural Gas Sector

- Source Determination
- FIP for Indian Land Minor NSR Program
- Control Technology Guidelines (CTGs)
- NSPS OOOO
- NSPS OOOOa
Source Determination

• Two Options for “Adjacent” Definition

• Option 1 – Proximity
  – Located on the same surface site or on surface sites that are located within ¼ mile of one another

• Option 2 – Proximity or functional interrelatedness
  – Separated by a distance of ¼ mile or more and there is an exclusive functional interrelatedness
  – Separated by a distance of less than ¼ mile
Indian Land Minor NSR FIP

- “True minor” sources in oil and natural gas production segment
- Construction/modification on or after October 3, 2016
- Requires registration (form proposed)
- Must address threatened and endangered species and historic properties
- What about synthetic minor sources?
Indian Land Minor NSR FIP

• Incorporates requirements from 6 standards
  – NSPS Kb (fuel storage tanks)
  – NSPS IIII, JJJJ (stationary engines)
  – NSPS OOOOa (compressors, fugitives, well completions, pneumatic controllers, pneumatic pumps, storage vessels)
  – MACT HH (glycol dehydrators)
  – MACT DDDDD (process heaters)
Control Technology Guidelines

- Suggested requirements for existing Oil & Gas sources in non-attainment areas
  - Suggest NSPS OOOOa
  - “moderate” and higher non-attainment areas
- CO is “marginal” in Denver and northern Front Range
  - Some areas to be designated “moderate” based on existing ozone standard
  - More areas likely become non-attainment based on new ozone standard
NSPS 0000

- 2012 Final Rule
  - Natural Gas Sector through natural gas processing plant
  - Oil Sector up to pipeline custody transfer
    - Excludes oil well completions
    - Storage vessels & pneumatic controllers

- August 2015 Final Amendments
  - Storage vessels in parallel
  - Low pressure gas well definition
NSPS 0000

• September 2015 Proposed Amendments
  – After August 23, 2011 and On or Before September 18, 2015
  – Capital expenditure definition
  – Control devices on storage vessel and centrifugal compressors
    • Monthly Method 22 tests
    • 600 ppmv for enclosed combustor outlet
      – Currently 20 ppmv
  – Bypass devices: both alarm at device and remote alarm
NSPS 0000a

- VOCs, $\text{SO}_2$, & $\text{CH}_4$
- 2015 Proposed Rule
  - After September 18, 2015
  - Natural Gas Sector up to city gate
    - Natural gas transmission and storage
  - Oil Sector up to pipeline custody transfer
    - Oil well sites
  - $\text{CH}_4$ regulation identical to VOC regulation
Newly Affected Facilities/Locations

• Pneumatic pumps
  – All locations
• Well completions
  – Oil well sites
• Fugitive Emissions
  – Well sites and compressor stations
• Natural gas compressor stations
  – Transmission and storage segment
  – Gathering and boosting segment
Pneumatic Pumps

• Natural gas-driven
  – Chemical/methanol pumps
  – Diaphragm pumps
• Natural gas processing plants
  – Zero emissions
• All other locations
  – 95% emission reduction IF control device already available on site
Oil Well Completions

• Same standards as natural gas wells
• Non-wildcat and non-delineation wells
  – Reduced Emissions Completions (REC) and combustion
• Wildcat and delineation wells
  – Completion combustion device
Fugitive Emissions

- NOT just equipment leaks
- Well sites and compressor stations
  - Exclude Christmas tree and low production well sites
- Initial and semiannual surveys
- Optical gas imaging (OGI) for detection
  - Any observed visible emission from component
- Monitoring plan
- “Modification” definition
  - whole facility or only added/modified equipment?
- 15 day repair
  - OGI (no visible emission) or Method 21 (500 ppm)
Compressor Stations

• Wet seal centrifugal compressors
  – 95% emission reduction
• Reciprocating compressors
  – Rod packing replacement OR
  – Route emissions to a process
• Pneumatic controllers
  – 6 scfh natural gas bleed rate limit
• Pneumatic pumps
  – 95% emission reduction IF control device already available on site
• Storage vessels
  – 95% emission reduction OR
  – Uncontrolled actual VOC emissions less than 4 tpy
Next Generation Compliance

• Reporting on Corporate Maintained Websites
  – Quantitative environmental results
• Electronic Reporting to EPA
• Third-party Reporting Directly to Regulator
  – Combustor vendors
• Third-party Compliance Verification Programs
  – PE Verification of Closed Vent System and Control Device Design and Installation
  – Auditing Infrared Camera Fugitives Monitoring
Comments Requested

• Wells
  – Low pressure wells
  – Low production wells
  – Low GOR wells
  – Inherently low fugitive wells

• How to Regulate Liquids Unloading Operations

• Use of Pressure Assisted Flares

• Excluding well site water recycling operation storage vessels
## CO Regulation 7 Comparison

<table>
<thead>
<tr>
<th>Item</th>
<th>NSPS OOOOa</th>
<th>CO Regulation 7 Section XVII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage tank controls</td>
<td>6 tpy PTE 95% emission reduction</td>
<td>6 tpy Uncontrolled Actual Emissions 95% control efficiency (with 98% design destruction efficiency if combustion device)</td>
</tr>
<tr>
<td>Storage tank “components”</td>
<td>Fugitive Emissions – LDAR Includes access doors, PRD, thief hatches or other storage vessel openings</td>
<td>Leaking – LDAR Venting (thief hatches, PRD) - STEM</td>
</tr>
<tr>
<td>Storage tank associated equipment</td>
<td>Separators – LDAR Control equipment – closed vent and control device provisions</td>
<td>AVO and additional visual inspections</td>
</tr>
<tr>
<td>(separators, control equipment)</td>
<td></td>
<td></td>
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## CO Regulation 7 Comparison

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<td><strong>Fugitives LDAR Well sites and compressor stations</strong></td>
<td>OGI - Any visible emission from OGI</td>
<td>OGI - Any detectable emission not associated with normal equipment operation Method 21 - 500 – 2000 ppm detection threshold Monthly, quarterly, annual, or initial monitoring 5 day first attempt at repair or 15 days if need parts</td>
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<tr>
<td></td>
<td>Semiannual monitoring – (can be increased or decreased) 15 day repair - OGI or Method 21 for repair verification</td>
<td></td>
</tr>
<tr>
<td><strong>Pneumatic controllers Well sites and compressor stations</strong></td>
<td>Low bleed (&lt; 6scfh)</td>
<td>Low bleed (&lt; 6scfh) or no bleed</td>
</tr>
</tbody>
</table>
Any Questions?

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