OIL & GAS INDUSTRY
AIR REGULATIONS UPDATE

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RAMBOLL ENVIRON

MIDWEST AWMA CONFERENCE
FEBRUARY 24, 2016

SUMMARY

- NSPS Subpart OOOO/OOOOa – VOC & Methane
- Source Determination
- Brief Updates
  - Control Techniques Guidelines
  - FIP for Indian Country - Minor NSR Program for O&G Production
  - GHG Mandatory Reporting – Subpart W
  - TRI Reporting Status

NSPS SUBPART OOOO/OOOOa: VOC & METHANE

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NSPS SUBPART OOOO/OOOOa

- Proposed September 18, 2015 (80 FR 56593)
- Comments Due: Nov. 17, 2015/Extended Dec. 4, 2015
- Why methane?
  - GHG "endangers public health and public welfare"
  - GHG mandatory reporting data shows O&G operations are 2nd largest emitter of GHGs in U.S.
  - Climate Action Plan – Strategy to Reduce Methane Emissions, goal to reduce emissions from O&G sector

NSPS SUBPART OOOO/OOOOa

- Subpart OOOOa:
  - Establish CH_4 standards for emission sources currently regulated for VOC
  - Extend current VOC standards & establish CH_4 standards for remaining unregulated equipment
  - Establish CH_4 & VOC standards for emission sources not currently covered by NSPS Subpart OOOO
  - Best system of emissions reduction (BSER)

    BSER for CH_4 = BSER for VOC
- Subpart OOOO
  - Amendments to existing regulations to improve implementation

Sources covered by the 2012 NSPS for VOCs and the 2015 Proposed NSPS for Methane and VOCs, by site				
Location and Equipment/Process Covered	Required to Reduce Emissions Under EPA Rules	Rules that Apply		
		2012 NSPS for VOCs*	2015 proposed NSPS for methane	2015 proposed NSPS for VOCs
Natural Gas Well Sites				
Completions of hydraulically fractured wells	✓	●	●	
Compressors	*Not covered*			
Equipment leaks	✓		●	●
Pneumatic controllers	✓	●	●	
Pneumatic pumps	✓		●	●
Storage tanks	✓	●		
Oil Well Sites				
Completions of hydraulically fractured wells	✓		●	●
Compressors	*Not covered*			
Equipment leaks	✓		●	●
Pneumatic controllers	✓	●	●	
Pneumatic pumps	✓		●	●
Storage tanks	✓	●		

http://www3.epa.gov/airquality/oilandgas/pdfs/og_table_081815.pdf

Sources covered by the 2012 NSPS for VOCs and the 2015 Proposed NSPS for Methane and VOCs, by site				
Location and Equipment/Process Covered	Required to Reduce Emissions Under EPA Rules	Rules that Apply		
		2012 NSPS for VOCs*	2015 proposed NSPS for methane	2015 proposed NSPS for VOCs
Production Gathering and Boosting Stations				
Compressors	✓	●	●	
Equipment leaks	✓		●	●
Pneumatic controllers	✓	●	●	
Pneumatic pumps	✓		●	●
Storage tanks	✓	●		
Natural Gas Processing Plants				
Compressors	✓	●	●	
Equipment leaks	✓	●	●	
Pneumatic controllers	✓	●	●	
Pneumatic pumps	✓		●	●
Storage tanks	✓	●		
Natural Gas Compressor Stations (Transmission & Storage)				
Compressors	✓		●	●
Equipment leaks	✓		●	●
Pneumatic controllers	✓		●	●
Pneumatic pumps	✓		●	●
Storage tanks	✓	●		
* Note: Sources already subject to the 2012 NSPS requirements for VOC reductions that also would be covered by the proposed 2015 methane requirements would not have to install additional controls, because the controls to reduce VOCs reduce both pollutants				

http://www3.epa.gov/airquality/oilandgas/pdfs/og_table_081815.pdf

SUBPART OOOOa - PROPOSED STANDARDS

- Compressors (except located at well sites)
  - Wet seal centrifugal compressors: 95% reduction of CH_4 & VOC
  - Reciprocating compressors:
    - Replace rod packing based on specified hours of operation, or
    - Replace rod packing based on elapsed calendar months, or
    - Route emissions from rod packing to process through closed vent system under negative pressure
- Pneumatic controllers
  - All except natural gas processing: Natural gas bleed rate limit of 6 scfh
  - Natural gas processing plants: Zero natural gas bleed rate (current NSPS)

SUBPART OOOOa - PROPOSED STANDARDS

- Pneumatic pumps
  - All except natural gas processing: 95% control of CH4/VOC if control device onsite
  - Natural gas processing plants: Zero emissions of CH4/VOC
- Hydraulically fractured oil well completions
  - Same as 2012 NSPS for hydraulically fractured gas well completions
  - Subcategory 1 wells (non-wildcat, non-delineation)
    - Reduced emissions completions in combination with combustion device
    - Not required where not feasible
  - Subcategory 2 wells (wildcat, delineation)
    - Completion combustion device

SUBPART OOOOa - PROPOSED STANDARDS

- Fugitive emissions from wells sites and compressor stations
  - Semiannual fugitive emissions survey with optical gas imaging (OGI) (or annual for new/modified well sites, requesting comment on quarterly for well sites and compressor stations)
  - Repair sources of fugitive emissions within 15 days
  - Initial survey of fugitive emissions components within 30 days of well completion or upon production, 30 days of startup for compressor stations
  - Solicit comment on whether EPA Method 21 alternative to OGI
  - Develop monitoring plan outlining measure for locating sources and detection technology to be used, number and ID of components
  - Defined "modified" – new well is completed, existing well is fractured/refractured, new compressor is added

SUBPART OOOOa - PROPOSED STANDARDS

- Equipment leaks at Natural Gas Processing Plants
  - Same as 2012 NSPS
  - Require NSPS Part 60, Subpart VVa level of control

SUBPART OOOOa - PROPOSED STANDARDS

- Recordkeeping & Reporting
  - Consistent with current NSPS
  - Initial notifications (except for wells, pneumatic controllers, pneumatic pumps & compressors)
  - Annual reports

SUBPART OOOO AMENDMENTS

- Storage vessel control device monitoring and testing
  - Revise enclosed combustor requirement from 20 ppmv to 600 ppmv
  - Monitor visible emissions consistent for all enclosed combustion units – monthly 15 minute Method 22
- Initial compliance requirement for bypass devices – require both alarm at bypass device and remote alarm
- Recordkeeping of repair logs for control devices failing visible emissions test
- Initial report due date January 15, 2014 erroneous, should be January 13
- Flare design and operation comply with 40 CFR 60.18
- Solicit comment on pressure-assisted flares & parameters to monitor to ensure compliance

SUBPART OOOO AMENDMENTS

- Fixed reconstruction notification reference, only OOOO
- Re-proposing provisions for management of waste from spent carbon canisters to allow additional comment
- Clarify definition of "capital expenditure" for equipment leaks provisions in Subpart OOOO to mirror definition in Subpart VV, but reflect basis year of 2011 (year OOOO was proposed)
- Clarify initial compliance certification for LDAR requirements is within 180 days of initial startup
- Requesting comment on approaches that could be taken to amend definition of "storage vessel" to ensure tanks associated with water recycling operations not subject to rules

COMPLIANCE DATES

- Subpart OOOO amended to apply to facilities constructed, modified or reconstructed:
  - After August 23, 2011, (*i.e.*, the original proposal date of subpart OOOO) and
  - Before September 18, 2015 (*i.e.*, the proposal date of the new subpart OOOOa) and would be amended only to
- Subpart OOOOa would apply to facilities constructed, modified or reconstructed:
  - After September 18, 2015
  - Include current VOC requirements already provided in subpart OOOO as well as new provisions for methane and VOC across the oil and natural gas source category

SOURCE DETERMINATION

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SOURCE DETERMINATION

- Proposed September 18, 2015 (80 FR 56579)
- Applies only to the oil and natural gas sector (SIC Group 13)
- EPA proposes to clarify the term "adjacent" in the definition for "building, structure, facility or installation" used to determine
  - Stationary source in PSD/NNSR program
  - Major source in Title V program
- Comments Due: Nov. 17, 2015/Extended Dec. 4, 2015

CURRENT DEFINITIONS

- PSD/NNSR
  - *Stationary source*: Any building, structure, facility, or installation which emits or may emit a regulated NSR pollutant.
  - *Building, structure, facility or installation*: All of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control).
- Title V
  - *Major source*: Any stationary source (or group of stationary sources that are located on one or more contiguous or adjacent properties, and are under common control of the same person (or persons under common control) belonging to a single major industrial grouping.

Note: Industrial grouping refers to two-digit SIC code

EPA INTERPRETATION

- EPA uses 3 part test:
  - (1) Same industrial grouping
  - (2) Location on contiguous or adjacent property
  - (3) Under common control
- Adjacent not defined in regulations
- Interpretation of "contiguous or adjacent": Land associated with the source is connected or nearby another source
- EPA has considered both distance and whether they share operational dependence or functional interrelatedness

EXAMPLES OF EPA INTERPRETATION

- Alcoa: Aluminum smelters with same SIC code, located 3.4 miles apart, common owner → considered a single source
  - Adjacent because of shared materials and personnel, would be operating as one facility
- Summit Petroleum Corporation: Oil and gas sweetening plant and approx. 100 oil and gas wells located within 8 mile radius, same two-digit SIC code, under common control → considered a single source *<overturned>*
  - Adjacent given proximity and exclusive interdependence: Connected by pipelines, processed through sweetening plant before it can be marketed
- BP: Two natural gas compressor stations and numerous well sites located within San Juan Basin → not single source
  - No dedicated interrelationship – Could send nat gas to BP compressor stations or others, well production would not stop if BP compressor stations shut down, gathering pipeline between wells and stations comingled gas from other operators
- 2007 Guidance: Source Determination for Oil and Gas Industries, consider proximity and not operational dependence → withdrawn in 2009

EPA INTERPRETATION: WHAT LED TO PROPOSAL?

- Summit appealed single source determination in 2012
  - Sixth Circuit overturned EPA's single source determination
  - Use of interrelatedness is unreasonable and contrary to the plain meaning of "adjacent", related only to physical proximity
- EPA directed regions to apply outcome within Sixth Circuit, rest of country continue with same interpretations
  - Challenged in DC Circuit for violating EPA's Regional Consistency regulations
  - DC Circuit agreed, memo conflicted with EPA regulations that promote uniform national regulatory policies
  - Decision noted that EPA could avoid conflict by revising source determination regulations to explicitly require consideration of functional interrelatedness

EPA PROPOSAL: TWO OPTIONS

Option 1: Based on proximity (EPA preferred)

For onshore activities under SIC Major Group 13: Oil and Gas Extraction, all of the pollutant-emitting activities that are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant emitting activities shall be considered adjacent if they are located on the same surface site, or on surface sites that are located within ¼ mile of one another, where a surface site has the same meaning as in 40 CFR 63.761.

EPA PROPOSAL: TWO OPTIONS

Option 2: Based on proximity & functional interrelatedness

For onshore activities under SIC Major Group 13: Oil and Gas Extraction, all of the pollutant-emitting activities that are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant emitting activities shall be considered adjacent if one of the following circumstances apply:

(1) The pollutant-emitting activities are separated by a distance of ¼ mile or more and there is an exclusive functional interrelatedness; or

(2) The pollutant-emitting activities are separated by a distance of less than ¼ mile.

EPA COMMENT REQUESTS

- Option 1
  - Specific distance appropriate – other distances
  - Starting point of distance measurement - center of emissions or some other feature (prevent daisy-chaining)
  - Would setting a distance increase or limit permitting authority oversight because more likely subject to minor source permitting
  - Would smaller scope of each source would result in unacceptable permitting burden by creating large number of small sources
  - Would circumstances exist where owner/operator prefer to combine surface sites or other operations beyond presumptive distance
  - Environmental benefit/harm from approach

EPA COMMENT REQUESTS

- Option 2
  - Advantages/disadvantages
  - Characteristics related to sector that would make approach more/less difficult to implement
  - Define functional interrelatedness
  - Configurations EPA should consider to be functionally interrelated
  - Specific distance beyond which sources should not be considered interrelated, even if interconnected
  - Environmental benefit/harm from approach

REGULATORY BRIEFS

Control Techniques Guidelines

FIP for Indian Country – Minor NSR Program for O&G

GHG Mandatory Reporting – Subpart W

TRI Reporting Status

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CONTROL TECHNIQUES GUIDELINES

- Draft released September 18, 2015
- Provide recommendations for state and local air agencies to consider in determining Reasonably Available Control Technology (RACT) for reducing emissions from covered processes and equipment
- RACT applies in ozone nonattainment areas classified "moderate" and above, and throughout Ozone Transport Region (11 northeast states)
- Include: Storage tanks, pneumatic controllers, pneumatic pumps, centrifugal and reciprocating compressors, equipment leaks from natural gas processing plants, other equipment leaks
- Similar to 2012 NSPS & proposed NSPS

FIP FOR INDIAN COUNTRY
MINOR NSR PROGRAM FOR OIL & GAS

- Proposed on Sept 18, 2015 (80 FR 56554)
- Coverage by registration, not permit
  - Streamline the approval process
  - EPA lacks resources, issue many oil & gas permits
- Applies to new/modified true minor sources only
- May not be used in nonattainment areas

GHG MANDATORY REPORTING – SUBPART W

- Final rule: October 22, 2015 (80 FR 64262)
- Reporting required for completions and workovers of oil wells with hydraulic fracturing
- Add two new industry segments:
  - Onshore Petroleum and Natural Gas Gathering and Boosting
  - Onshore Natural Gas Transmission Pipelines
- Require reporting of well IDs
- Allow use of Best Available Monitoring Methods for new sources for RY 2016

GHG MANDATORY REPORTING – SUBPART W

- Proposed rule: January 29, 2016 (81 FR 4987)
- Align leak detection monitoring methods in Subpart W with those in NSPS Subpart OOOOa
  - Incorporated by reference
  - Only required for those subject to Subpart OOOOa, could be used by others on voluntary basis
- Add emission factors for leaking equipment
  - Used in conjunction with new monitoring methods
  - Current calc method uses component counts and population factors
    - Doesn't take into account LDAR programs
    - New methodology allows option to use leak surveys/leaks identified and leaker emission factors

TRI REPORTING STATUS

- October 22, 2015 – EPA responded to petition from Environmental Integrity Project and 16 other groups
- Petition requested the Oil and Gas Extraction Industry be added to scope of sectors covered by Toxics Release Inventory (TRI)
- EPA granted in part, denied in part
  - Granted: Natural gas processing facilities appropriate to include in scope of TRI, EPA will begin rulemaking process
  - Denied: Declined to add rest of Oil and Natural Gas Extraction sector to scope of TRI at this time

THANK YOU

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