NSPS 0000 & Fracking Air Quality Rule Updates

Oil & Gas Environmental Compliance Conference –

Appalachian Basin

May 13-14, 2014

Robert Keatley, PE
Senior Engineer/Supervisor
DEP – Division of Air Quality

NSPS 0000

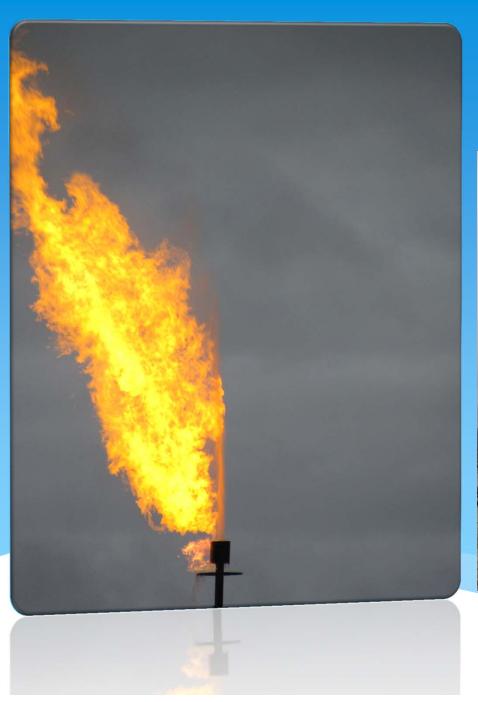
- * New Source Performance Standard ("NSPS") OOOO Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution
- * Published August 16, 2012
- * Amended September 23, 2013
- Compliance Date Flowback October 15, 2012
- Compliance Date Pneumatic Controllers October 15, 2013
- * Compliance Date- Storage Vessels April 15, 2014 and April 15, 2015

NSPS 0000 Affected Facilities

- * Natural gas wells ("not oil wells") hydraulically fractured
- Centrifugal Compressor using wet seals
- Reciprocating Compressor
- * Pneumatic Controllers continuous bleed
- * Each Storage Vessel (PTE 6 tpy VOCs) crude oil, condensate, produced "water", & intermediates
- Natural Gas Processing Plants LDAR
- * Sweetening Plants

- * Applies to each hydraulically fractured/refractured gas well drilled (commenced construction, modification, or reconstruction) after August 23, 2011
- * Hydraulically fractured/refractured includes wells fractured w/ Water, Nitrogen, and/or Carbon Dioxide

- * Each well drilled after 8/23/11 and before 1/1/2015 must:
- * Flowback Operations reduce VOC emissions with a completion combustion device (typically a flare) on or after October 15, 2012
- * Completion Combustion Devices must be equipped with a "reliable continuous ignition source"
- * Sources have a general duty to safely maximize resource recovery and minimize releases to the atmosphere



Completion Combustion Devices (aka Flares)



- * Gas Wells drilled on or after January 1, 2015
- * "Green Completions" route recovered liquids into storage vessels or re-inject the liquids into the well or another well and route recovered gas into a gas flow line, collection system, re-inject into the well or another well, or use as fuel, "with no direct release to the atmosphere"
- * Salable quality gas must be routed to the flow line

- * Two (2) day Notification prior to commencement of each gas well completion beginning October 15, 2012
- * Electronically Notify DEP and EPA by using <u>DEPOilandGasSector@wv.gov</u> and <u>r3wellcompletion@epa.gov</u>
- * Instructions and form available on DAQ's website www.dep.wv.gov/daq

- * Must maintain a **daily log** for each gas well completion operation (digital photo alternative)
- * Records of duration of flow into a line; duration of combustion; duration of venting (digital photo alternative)
- * Specific reasons for venting in lieu of capture or combustion
- * Digital photographs w/ Lat. & Lon. of all the equipment used during flowback with specific location (alternative)

- * Annual report for each gas well and equipment the report must provide a list of all well completions and any deviations where well completion operations or equipment (storage vessels, etc) were not performed in compliance
- Must be certified by the responsible official
- Must submit initial report within 90 days may arrange a common schedule for annual reporting

Storage Vessels

- * Group 1 Storage Vessels installed after 8/23/11 and on or before 4/12/2013 with potential VOC emissions of six (6) tons/year or greater (each vessel) determined by 10/15/2013 and that are located at the well site more than 180 consecutive days
- * Group 2 Storage Vessels installed after 4/12/2013 with potential VOC emissions of six (6) tons/year or greater (each vessel) determined by April 15, 2014 or within 30 days of startup (whichever is later) and that are located at the well site more than 180 consecutive days
- * Vapor Recovery Units (VRUs) can be used to limit PTE provided they comply with the cover and closed vent system design requirements of NSPS OOOO "vented to the process"
- * DAQ's permitting threshold is 6 lbs VOC/hr (144 lbs/day) for the entire well site "Potential Emissions Not Actual Emissions"
- * Exemption less than 4 tpy VOC "Actuals" without controls (12 consecutive months, then monthly) VRUs not considered control devices for NSPS OOOO
- VRUs "do not" count toward reduction in PTE for Rule 13 permitting

Storage Vessels Cont'd

- Group 1 & 2 Storage Vessels shall reduce VOC emissions by 95%
- * Group 2 must achieve emission reductions by April 15, 2014
- * Group 1 must achieve emission reductions by April 15, 2015
- * May install "practically enforceable" controls to reduce PTE
- "Once In Always In", but may remove controls if actuals below 4 tpy VOC

Storage Vessels Cont'd "Non-Manufacture" Tested Controls

- * Enclosed Combustion Devices (aka flares) must operate with no visible emissions for periods not to exceed a total of 1 minute during any 15 minute period Monthly Method 22 VE checks for a minimum of 15 minutes
- * Enclosed Combustion Devices must have continuous burning pilot flame installed and operated and maintain the device to be leak free
- * Annual visual/smell LDAR of closed vent systems
- Must operate control device at all times vapors are vented

Storage Vessels Cont'd "Manufacturer" Tested Controls

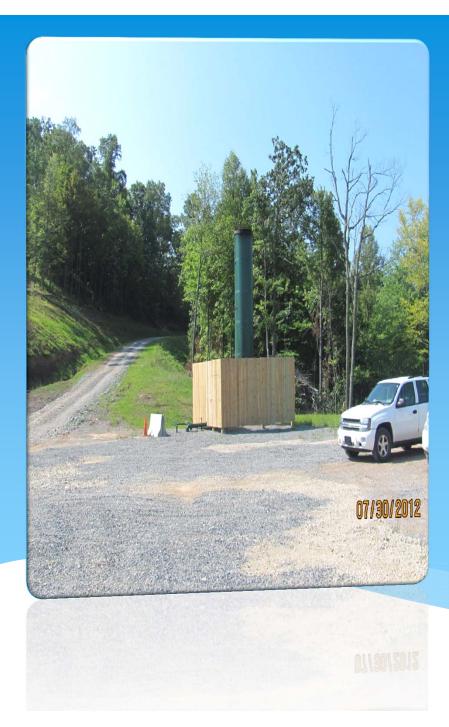
- * Combustion Controls "Enclosed Combustors" must be operated with no visible emissions (VE), except a total of 2 minutes during any hour
- * Method 22 VE must be performed each calendar quarter for 1 hour
- * Continuously monitor the inlet gas flow rate to demonstrate the flow is equal to or less than the max. specified by manufacturer
- * Continuously monitor for pilot flame at all times

Storage Vessels Cont'd Performance Testing Controls

- * Control Device "exempted" from performance testing, if performance test conducted by manufacturer in accordance with NSPS OOOO
- * Boiler or process heater vent stream introduced with the primary fuel is exempt from performance testing
- * Performance testing required for non-manufacturer tested controls to demonstrate compliance with 95% reduction within 180 days







Storage Vessel – Combustor Control Device "Thermal Vapor Incinerator"

(aka Enclosed Flare)

Pneumatic Controllers

- * Pneumatic controllers installed after 8/23/2011 (extraction) & 10/15/2013 (wellhead to extraction) each pneumatic controller must be tagged with month & year of installation
- * Reduce VOC emissions at wells to extraction plants (6 scf/hr or less bleed rate) and at extraction plants (zero bleed rate) by using a low bleed or no bleed design by **October 15, 2013**
- * Exemptions for less than or equal to 6 scfh continuous bleed and based on functional needs, including but not limited to response time, safety and positive actuation



Compressor Engines after 8/23/2011

- * Reciprocating compressors before extraction reduce emissions by the replacement of rod packing (every 26,000 hours of operation or 3 years) *well site engines are exempt
- Centrifugal compressors (Wet Seal) required to install air pollution control equipment to reduce emissions by 95% and to monitor this equipment *well site engines are exempt



Other Big Changes

* MACT Subpart HH – Dehydration Unit Updates

*Annually update Wet Gas Analysis and GLYCalc determination; if the station's actual emissions are greater than 50% of major source thresholds (storage vessels included, not engines)

*Updated samples and GLYCalc determinations by October 12, 2012 or within one year prior

*Must use the **maximum** designed glycol pump recirculation rate when determining major source status

*Must include storage vessels in determining major source status of HAPs (excludes surge control vessels and knockout vessels)

Other Big Changes

* NSPS KKK Replaced with NSPS 0000

- * LDAR requirements at Extraction Plants that commenced construction, modification, or reconstruction after August 23, 2011
- Requires LDAR in accordance with NSPS VVa, which has lower leak definitions

MACT ZZZZ RICE Engines Rule Updated

- Compliance dates have changed
- * Non-road Engines are not subject to this rule
- New exemption for existing area source engines defined as "Remote" stationary RICE
- * Remote RICE exempt from emission testing requirements
- * Must evaluate the status of their "Remote" stationary RICE every 12 months
- * Non-remote 4SLB & 4SRB engines > 500 HP must have a catalyst installed by Oct. 19, 2013 (unless granted an extension)

Questions?

Robert Keatley, PE
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304

Phone: 304-926-0499 ext. 1695

E-mail: Robert.L.Keatley@wv.gov