

**Winds of Change
The Air Emission Update**



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**Winds of Change
The Air Emission Update**

- Production Equipment**
- Gas Processing**
- Gas Compression**
- Aftermarket Services**
- Water Treatment**
- Air Quality Management**




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Production Equipment | Gas Processing | Gas Compression | Aftermarket Services | Water Treatment | Air Quality Management

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Agenda

- **NESHAP ZZZZ update**
- **NSPS 0000 update**
- **Pennsylvania permitting & shale play rules**
- **Texas's new Permit By Rule**

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RICE MACT NESHAP

*“Regulations grow at the same rate as weeds.”
~ Norman Ralph Augustine*

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NESHAP Subpart ZZZZ Area Source Rule Recap

- Final rule was published August 2010
- Compliance dates of May 3, 2013 and October 19, 2013
- High level rule requirements
 - Management Practices
 - CI engines \leq 300 hp
 - 2 stroke
 - 4 stroke \leq 500 hp
 - Emission limits
 - CI engines > 300 HP
 - 4 stroke > 500 hp
 - Continuous monitoring
 - Enforceable maintenance

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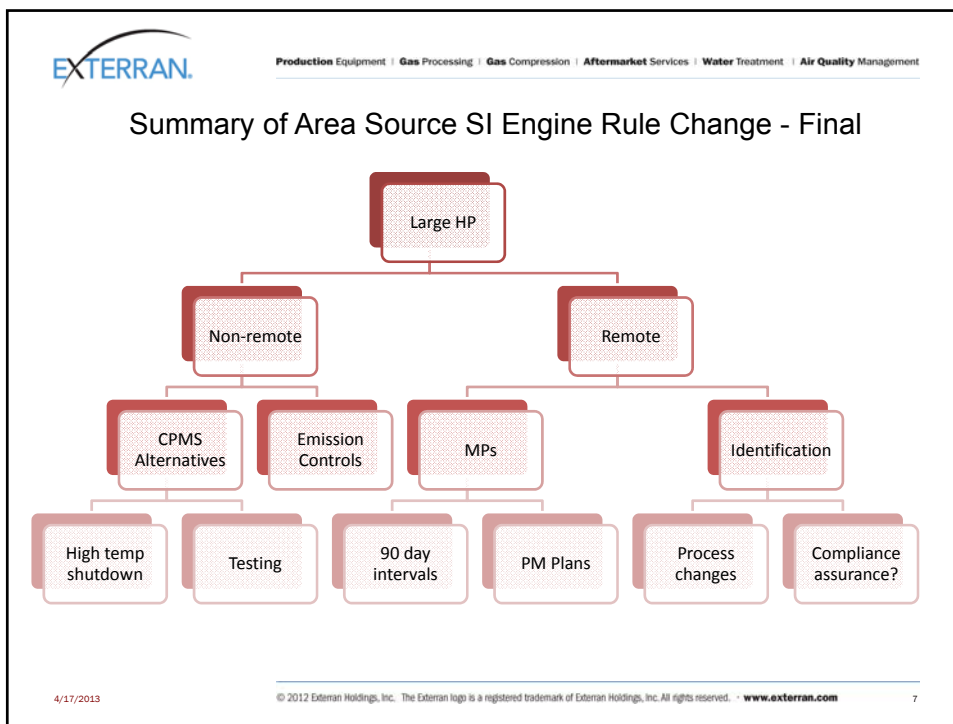
NESHAP ZZZZ Litigation

```

    graph TD
      API[API] --> CPMS((CPMS*  
Sub-categorization**))
      INGAA[INGAA] --> CPMS
      EXH[EXH] --> CPMS
      GPA[GPA] --> CPMS
  
```

Alternatives?
*eliminates significant capital investments
**benefit is unknown


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Definition of Remote

- Offshore, beyond inland waters
- RICE on a pipeline segment
 - 10 or fewer occupied buildings and none 4 stories or more w/in 220 yd of any 1-mi length of pipe
 - Not w/in 100 yd of any occupied building
 - Pipeline means all facilities through which gas moves in gathering, transmission, distribution, or storage
- RICE NOT on a pipeline segment
 - 5 or fewer occupied buildings and none 4 stories or more w/in 0.25 mi radius of the engine
- Preamble specifically references DOT Class 1
- Must meet definition on 10/19/2013
- Reevaluate status annually *keep records*
- One year to get into compliance if status changes




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NESHAP Implementation

- **Key Issues**
 - **Management Practices**
 - **Emission Limits**
 - **Engine Identification**


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Management Practices

- **May need to update Preventative Maintenance Standards**
- **Involves checking/changing the oil, spark plugs, hoses, and belts – Can you provide records for 5 years?**
 - 500 hour interval for Emergency CI Engines (1000 hr for air cleaner)
 - 1000 hour interval for CI engines \leq 300 HP (500 hr for hoses and belts)
 - 1440 hour interval for Four stroke engines \leq 500 HP
 - 2160 hour interval for remote Four stroke engines $>$ 500 HP
 - 4320 hour interval for Two stroke engines

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Emission Limits

What are the requirements?

- **Non-remote Four stroke engines > 500 HP**
 - Rich burn – 270 ppm CO or 75% reduction OR 30% reduction of THC
 - Lean burn – 47 ppm CO or 93% reduction
- **CI engines 300<HP≤500**
 - 49 ppm CO or 70% reduction
- **CI engines > 500 HP**
 - 23ppm CO or 70% reduction
- **Likely requires all affected engines to install emission control systems**
- **High Temperature Shutdown alternative**
- **Portable testing and THC testing in place of RM testing for Four stroke engines**
 - Appendix A in rule, CTM-034

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Engine Identification

- **Remote vs Non-remote**
 - “DOT-esque” language
 - Remote engines require annual verification
 - One year to get into compliance if status changes
- **New vs Existing**
 - “Commenced Construction”
 - Quad J vs Quad Z
 - New after June 12, 2006?

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NESHAP Timeline

- **Updated version of rule signed January 14, 2013**
- **Effective April 1, 2013**
- **October Deadline remains for NG engines, May Deadline for CI engines**

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The Future of NESHAP?

- **March 28 – April 1, 2013**
 - Environmental Groups and DE filed petitions for judicial review
 - Emergency Engine Provisions
 - Remote Engine “exemptions”
- **Engine testing companies seeking use of FTIR testing**
 - Question on accuracy of CTM034 methodology

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NSPS 0000

*“Friendship and money: oil and water.”
~ Mario Puzo*

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Affected Equipment

The rule affects Oil and Gas sites that have commenced construction, modified, or reconstructed after Aug 23, 2011

- Work practice standards for compressors
- Pneumatic device specifications (level controllers)
- Storage Tanks, Dehys, SRUs, LDAR (Leak Detection and Repair), Green Completions during Fracking


Final rule pre-publication 4/18/12

- Effective 60 days after publication – **10/15/12**

Geographic boundaries

- Federal rule – applies everywhere

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NSPS 0000

No VOC content threshold, except for LDAR

EPA did not consider cost effectiveness arguments


Transmission & Storage only includes storage tanks

Modification not redefined for NSPS 0000, refers to Subpart A

- Refractured wells **ARE** affected but...
- Relocated compressors are **NOT**

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NSPS 0000 & MACT HH/HHH

- **NSPS - New, reconstructed, or modified equipment will be subject:**
 - Compressors
 - Pneumatic devices
 - Hydraulically fractured gas wells
 - Storage vessels
 - Gas processing plants
 - Sulfur recovery units
- **NESHAP Major source definition changes**
 - At major sources: Small dehydrators subject to standards
 - LDAR program more stringent
 - At area sources: Annual applicability determination/documentation

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NSPS 0000

Reciprocating Compressors

- Only newly constructed compressors = affected facilities
- Replacement of Compressor Rod Packing hourly alternative
 - Allows changing packing every 36 months, no hourly records
- Wellhead Compressors are not affected facilities



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NSPS 0000

Pneumatic Controllers

- Definition of Affected Facilities only Continuous Bleed devices
- If using affected facilities, must be tagged with manufacturer info and installation date (mm/yy)
- Low bleed allowed at production facilities
- Air Actuation required at gas plants

Compliance Date – 10/15/12 (or upon startup) for gas plants, by 10/15/13 otherwise


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NSPS OOOO – What now?

Petition for Reconsideration

- **Several parties submitted Petition for Reconsideration in October 2012**
 - Includes States, NGOs, Trade Organizations
 - Expectations include future rule implementation delay and revision
 - Proposed Changes published March 28, 2013
 - Focus is on Storage Tank requirements
 - Comment Period ends May 13, 2013
 - Expected future changes that may affect other segments of the regulation and change Tank requirements further



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NAAQS & State Permitting Implications

“It’s absolutely stupid that we live without an ozone layer. We have men, we’ve got rockets, we’ve got saran wrap – FIX IT!!!”
~ Lewis Black

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PA General Permit Changes

- **GCA Commented on Proposed Changes**
 - Emission Limits
 - Incorporation of proposed federal rule requirements
 - PA did not distinguish between 4SLB and 2SLB
 - Operators require special permission to follow company maintenance plans
 - Daily visible emissions monitoring
 - Onsite recordkeeping required, even at unmanned facilities
 - Reference Method testing on all pollutants (including PM)
- **Benefits:**
 - Now includes Gas Processing Plants
 - Can be used to limit a site's PTE
 - No Max HP limitations on engines under GP-5 (use to limit to 1500 HP)
- **Concerns:**
 - Extremely low emissions limits (next slide)
 - Reference Method testing on ALL pollutants, including Formaldehyde

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PA General Permit Changes

Engine Type	Rated bhp	NOx	CO	NMNEHC as propane (excluding HCHO)	HCHO
NG-fired Lean and Rich burn	≤100	2.0 gm/bhp-hr	2.0 gm/bhp-hr	-	-
NG-fired Lean- burn	>100 to ≤500	1.0 gm/bhp-hr	2.0 gm/bhp-hr	0.70 gm/bhp-hr	-
NG-fired Lean- burn	>500	0.50 gm/bhp-hr	47 ppmvd @ 15% O2 or 93% reduction	0.25 gm/bhp-hr	0.05 gm/bhp-hr
NG-fired Rich-burn	>100 to ≤500	0.25 gm/bhp-hr	0.30 gm/bhp-hr	0.20 gm/bhp-hr	
NG-fired Rich-burn	>500	0.20 gm/bhp-hr	0.30 gm/bhp-hr	0.20 gm/bhp-hr	2.7 ppmvd @ 15% O2 or 76% reduction

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Other Shale Play States?

- Time period for petition has ended, GP-5 may stand as-is
- PA Permit sets precedent for considering these low emissions as BAT, could be a future concern
- OH
 - General Permit for wellsites, no plans to develop one for Plants or CS
- WV
 - Developed general permit for wellsites that references Quad O, J, and Quad Z
 - No plans to revise existing general permit for Plants or CS
- TX? ND?

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TX SMSS Permitting Timeline


TCEQ has proposed PBR 106.359 for MSS for areas not covered by Barnett Rule

Goal to have PBR finalized in Late July 2013 before January 5, 2014 deadline


Comment period ends April 15!

Enforceable compliance based on recordkeeping

No registration, Required BMPs



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TX SMSS Permitting

Activities Covered:

- Engine & Turbine Maintenance
- Repair, Adjustment, Calibration, Lubrication, and Cleaning of Process Equipment
- Replacement of Piping Components, Pneumatic Controllers, Boiler Refractories, Wet & Dry Seals, Meters, Instruments, Analyzers, Screens, and Filters
- Turbine or Engine Hot Section Swaps
- Piping used to bypass a facility during maintenance
- Planned MSS with the same character and quantity of emissions as the above activities
- Blowdowns – should be minimized, may already be authorized
- Pigging, Purging
- Tank Cleaning, Degassing
- Abrasive Blasting, Surface Prep, and Surface Coating of onsite equipment

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TX SMSS Permitting

Best Management Practices

- “Maintained in good working order and operated properly”
- Establish, Implement, and Update a maintenance program
 - Must include all onsite equipment
 - Must be consistent with “good air pollution control practice”
 - Must include cleaning and routine inspection of all onsite equipment
 - Must address training of personnel who perform onsite maintenance/repair
 - Must detail recordkeeping measures for planned MSS activities

Comments/Concerns

- What is an engine hot section swap?
- Onerous recordkeeping of insignificant emission sources
- Are engine break-in periods covered by this rule?

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In Summary – Regulatory Impact

NESHAP (Subpart ZZZZ)

- New rule affects all engines
- Management practices vs. emission standards
- Remote vs Non-Remote

NSPS (Subpart 0000)

- Impacts new, reconstructed, and modified units
- Recordkeeping (it's a team effort)


State Permitting

- PA and the future of shale play air compliance
- Texas SMSS Permitting Requirements

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Questions?



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