Air Toxics Regulatory Update

NACAA

Joint Permitting and Enforcement Workshop

June 15, 2011

Overview

- Updates
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  - Boiler MACT/CISWI Reconsideration
  - Petroleum Refinery Sector Rulemakings
  - Chemical Sector Rulemakings
  - Iron and Steel Sector Rulemakings
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Power Plant Mercury and Air Toxics Rule

- On March 16, 2011, EPA proposed Mercury and Air Toxics Standards, *the first national standards* to reduce emissions of toxic air pollutants from new and existing coal- and oil-fired power plants
- Proposed rule reaffirms the 2000 "appropriate and necessary" finding
- Standards will reduce emissions of:
  - Metals, including mercury (Hg), arsenic, chromium, and nickel
  - Acid gases, including hydrogen chloride (HCl) and hydrogen fluoride (HF)
  - Particulate Matter
- Proposed standards create uniform emissions-control requirements based on proven, currently in-use technologies and processes
- Compliance time line set by Clean Air Act: up to 4 years (3 years plus an additional year if granted by the permitting authority)

Power Plant Mercury and Air Toxics Rule

Requirements for Coal-Fired Units

- Mercury: numeric emission limit would prevent 91% of mercury in coal from being released to the air
- Acid gases: HCl emission limit as a surrogate for all acid gases; alternatively, SO_2 can be monitored as a surrogate
- Non-mercury metallic toxic pollutants such as arsenic and chromium: numeric emission limit for total PM as a surrogate, with alternate surrogate of total metal air toxics
- Organic air toxics (including dioxin): Work practice standards, instead of numeric standards, due to low-detected emission levels. Would ensure optimal combustion, preventing dioxin/furan emissions

Requirements for Oil-Fired Units

- Acid gases: Require numerical emission limits for HCl and HF
- Metal air toxics: Numerical emission limits for total metal air toxics (including Hg) with individual metal air toxics as alternate.
- Organic air toxics (including dioxin): Work practice standards, instead of numeric standards, due to low-detected emission levels. Would ensure optimal combustion, preventing dioxin/furan emissions.

Boiler MACT and CISWI Reconsideration

- Issues identified by EPA
  - Full load stack test requirement for carbon monoxide coupled with continuous oxygen monitoring
  - Dioxin emission limit and testing requirements
  - Data considered in setting emission limits may not fully reflect comments received
  - PM standards under GACT for existing area source oil-fired boilers
- Issues identified by Industry
  - Dioxin and CO limits
  - New source limits and HAP testing
  - PM limits for some biomass boilers
- EPA issued a stay on May 18, 2011
- We are working expeditiously on the reconsideration

Petroleum Refinery Sector Rulemakings

- 150 domestic refineries
- Second largest industrial source of greenhouse gases (GHGs)
- Taking an integrated approach across the sector to coordinate MACT and NSPS requirements
- Sector NESHAP and NSPS
  - Proposal: December 10, 2011
  - Final: November 10, 2012

Pollutant	2005 Emissions (TPY)
NOx	146,185
SO_2	247,239
VOCs	114,852
HAP	14,000
$PM_{2.5}$	30,333
GHGs	220 MMT CO_2e

Integrated Sector-Based Approach: Petroleum Refinery Sector

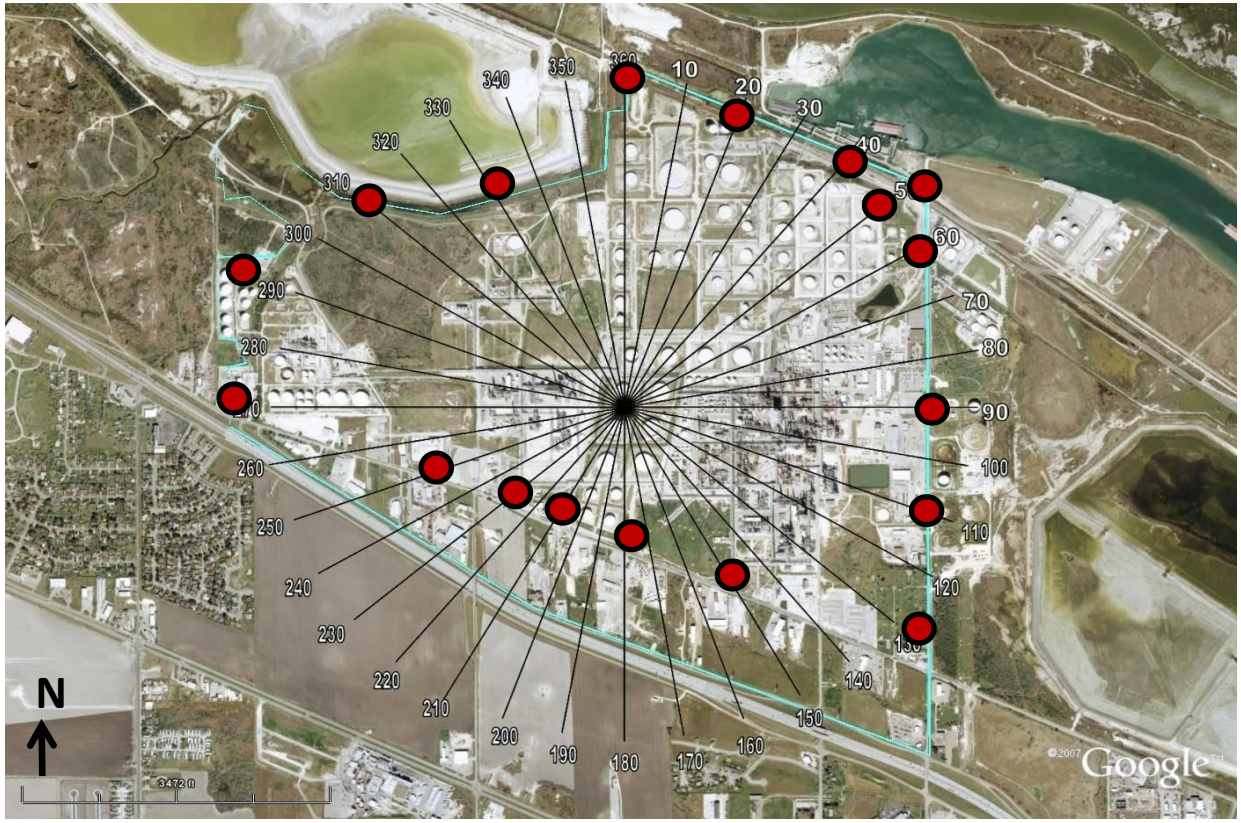
Emission Point	Current Regulations	Rulemaking Approach
Boilers	NSPS, MACT	MACT and NSPS amended
Process Heaters	NSPS	
Flares	NSPS, MACT	
FCCU, Reformer, Sulfur Plant	NSPS, MACT	
Process Vents	MACT	To be amended to reference the Uniform Standards
Heat Exchangers	MACT	
Wastewater	MACT, NESHAP, NSPS, CTG	
Storage	MACT, NESHAP, NSPS, CTG	
Loading	MACT, NESHAP	
Equipment Leaks	MACT, NSPS, NESHAP, CTG	

NSPS = New Source Performance Standards; MACT = Maximum Achievable Control Technology Standard;

NESHAP = National Emission Standards for Hazardous Air Pollutants; CTG= Control Techniques Guidelines

Fenceline Monitoring

- Locate passive samplers around the perimeter of each refinery
- If any concentration exceeds the action level, initiate tiered approach to positively identify facility contribution to risk
- If facility contribution to risk is unacceptable, initiate steps to reduce it



Chemical Sector Rulemakings

- Over 550 major source facilities emitting 15,000 tpy of HAP across entire sector
- Taking an integrated approach across the chemical sector to coordinate MACT and NSPS requirements that currently exist in many separate rules
- Propose consolidated set of regulations for HAP and VOCs from chemical plants
- Court orders require proposal for portions of this sector as early as November 2011; final in Winter 2012/13

Pollutant	Emissions (tpy)
Methanol	3,139
Hexane	3,080
Toluene	1,324
Styrene	848
Benzene	661
Butadiene	629
Xylenes	531
Ethylene glycol	464

Risk-driving pollutants

Iron and Steel Sector Rulemakings

Pollutant	2005 Emissions (TPY)
$PM_{2.5}$	14,210
Metal HAP	377
Coke oven emissions	390

- Revision of the electric arc furnace (EAF) area source MACT rule
  - Compiling data collected from the information collection request (ICR)
  - Considering Hg emission limits with enhanced monitoring
  - Plan to propose revised rule in late 2011/early 2012
- List EAFs as a major source for MACT standards
- Review NSPS for EAF and Integrated Iron & Steel
- Address remand of Integrated Iron & Steel MACT
- Evaluate Coke Oven residual risk

Oil and Gas Sector Rulemakings

- NSPS improvements are being considered for several emission points, including:
  - Completions of hydraulically fractured ("fracked") gas wells
  - Compressors
  - Storage vessels
  - Pneumatic devices
  - Equipment leaks
- NESHAP revisions are being considered for:
  - Glycol dehydrators
  - Storage tanks
- Oil and Gas Sector NESHAP and NSPS
  - Proposal: July 28, 2011
  - Final: February 28, 2012

Pollutant	2005 Emissions (tpy)
VOC	3,000,000
HAP	130,000
Methane	300 MMT CO_2e

Other Notable Regulatory Efforts

- EGU GHG NSPS
- Startup, Shutdown, and Malfunction Rule
- Cement Reconsideration

Upcoming Regulations

Rule	Proposal	Promulgation
Chromium Electroplating and Steel Pickling RTR NESHAP	9/14/10 (completed)	6/30/11*
Shipbuilding/Wood Furniture RTR NESHAP	12/3/10 (completed)	10/31/11
Primary Lead RTR NESHAP	1/31/11 (completed)	10/31/11
Secondary Lead Smelting RTR NESHAP	4/29/11 (completed)	12/16/11
Pulp & Paper RTR NESHAP	6/15/11*	1/31/12
Aerospace Manufacturing RTR NESHAP	8/31/11	6/29/12
Nitric Acid NSPS	9/30/11	11/15/11*
Mineral Wool Production/Wool Fiberglass RTR NESHAP	10/31/11	6/29/12
Ferroalloys RTR NESHAP	10/31/11	6/29/12
Primary Aluminum RTR NESHAP	10/31/11	6/29/12

*Negotiating extensions

Upcoming Regulations (continued)

Rule	Proposal	Promulgation
Secondary Aluminum RTR NESHAP	11/30/11	8/31/12
Pesticide Active Ingredient Production RTR NESHAP	11/30/11	11/30/12
Polyether Polyols Production RTR NESHAP	11/30/11	11/30/12
Group IV Polymers and Resins RTR NESHAP	11/30/11	11/30/12
Flexible Polyurethane Foam Prod. RTR NESHAP	10/31/12	10/31/13
Acrylic and Modacrylic Fibers RTR NESHAP	10/31/12	10/31/13
Polycarbonate Production RTR NESHAP	10/31/12	10/31/13
Off-Site Waste and Recovery RTR NESHAP	10/31/12	10/31/13
Phosphate Fertilizer RTR NESHAP	10/31/12	10/31/13
Group III Polymers and Resins RTR NESHAP	10/31/12	10/31/13