Note: This presentation does NOT cover ALL emissions limits
Nor ALL newly proposed rules.

Emissions Testing and Limits

In recent rule actions.

Stef Johnson

EPA OAQPS
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Mercury & Air Toxics Standards Rule (MATS)

- EGU's and Part 75 affected facilities
- MATS sets standards for both new and existing coal- and oil-fired units
  - Existing sources can meet either an input-based limit (pounds per million British thermal units [lb/MMBtu] or pounds per trillion British thermal units [lb/Tbtu]) or an output-based limit (lb/MWh or lb/GWh)
  - New sources must meet an output-based limit (pounds per megawatt-hour [lb/MWh] or pounds per gigawatt-hour [lb/GWh])

MATS Rule – (contd.)

- **Coal units (approximately 1,100 covered)**
  - Separate mercury standards set for two subcategories of coal-fired power plants:
  - Sets numeric emissions limits for mercury, acid gases (using HCl as a surrogate for all acid gases), and non-mercury metallic toxic pollutants (using filterable PM as a surrogate)

- **Oil units (approximately 300 covered)**
  - Sets separate standards for 4 subcategories of oil-fired power plants:
  - Sets numeric emissions limits for metal air toxics including mercury (using total metal air toxics as a surrogate) and for acid gases (using HCl and HF as surrogates)

MATS Monitoring

- Covers mercury (Hg), non-Hg HAP metals, acid gas HAP, other organic HAP
- Relies on continuous monitoring systems (CMS), sorbent tubes for Hg, or frequent testing
- EGU owners or operators get to choose between emission limit formats (existing units only) and monitoring techniques
- Can be grouped into two main categories:
  - Liquid oil-fired EGUs
  - Other EGUs (Coal-Fired, IGCC, and Solid oil-derived fuel-fired EGUs)

MATS Monitoring (contd.)

- Other reported information includes
  - Electrical production and fuels used during startup and shutdown, stack test reports, NOCS reports and RATA tests.

- Emissions are calculated from pollutant concentrations obtained by CEMS, tests, sorbent.

MATS Monitoring – Chart

Pollutant	Fuel	Choice of Monitoring Technique			
		1	2	3	4
Hg	Solid	Hg CEMS	Sorbent traps		
Non-Hg metals	Solid	PM CEMS	Metals CEMS	Quarterly testing	PM CPMS and annual testing
HCl	Solid	HCl CEMS	SO2 CEMS	Quarterly testing	
Metals, including Hg	Liquid oil	PM CEMS	Metals CEMS	Quarterly testing	PM CPMS and annual testing
HCl	Liquid oil	HCl CEMS	CPMS and quarterly testing	Fuel moisture	
HF	Liquid oil	HF CEMS	CPMS and quarterly testing	Fuel moisture	
Organic HAP	Any	Tune ups			

MATS Emissions Limits – Coal

Pollutant	Bituminous (lb per TWh)	Sub Bitumin/Lig. (lb per TWh)
Hg (30 BOD rolling avg) (90 BOD rolling avg if using emissions averaging)	13 11	13 11
PM (filterable)	300,000	300,000
Metals (optional) (total non-Hg)	500	500
HCl	20,000	20,000

Portland cement rule:

Final Rule promulgated on 02/12/2013

Cement kilns	New	Existing
PM	0.02 lb/ton-clinker	0.07 lb/ton-clinker
THC / Organic HAP	12 ppmvd	24ppmvd
HCl	3 ppmvd	3 ppmvd
Dioxin/Furan	0.2 ng/dscm TEQ	0.2 ng/dscm TEQ
Mercury	21lb/MM tons-clinker	55lb/MM tons-clinker

Portland Cement Rule

- **Emission measurement specifics:**
  - Hg measured with EPA Method 30B. (sorbent trap)
  - HCl measured with EPA Method 321. (FTIR)
  - O-HAP alternate measured as sum of:
    - Formaldehyde, benzene, toluene, styrene, m-xylene, p-xylene, o-xylene, acetaldehyde, and naphthalene.
    - O-HAP measured with EPA Method 18, 320, ASTM D6348-03
    - Annual PM testing, all other tests at 30 month intervals.

Industrial Boiler Rule

Final rule promulgated on 12/21/2012

Solid fuel/coal	New	Existing
PM -Filterable	1.1E-03 lb/Mmbtu	4.0 E-02 lb/Mmbtu
Mercury	8.0E-07 lb/Mmbtu	5.7E-06 lb/Mmbtu
CO	0.13 lb/Mmbtu	0.14 lb/Mmbtu
HCl	0.022 lb/Mmbtu	0.022 lb/Mmbtu

- Testing required every three years
- Hg measured by sorbent trap (M 30B) or adsorbing solution (M 29)

Commercial/Industrial Solid Waste Incineration (CISWI)

*Rule Proposal

Incinerator	New	Existing
PM	18 mg/dscm	34 mg/dscm
Mercury	8.4E-04 mg/dscm	5.4E-03 mg/dscm
Cadmium	2.3E-03 mg/dscm	2.6E-03 mg/dscm
Lead	1.9E-03 mg/dscm	3.6E-03 mg/dscm
HCl	9.1E-02 ppmv	29 ppmv
Dioxin/Furan	0.13 ng/dscm TEQ	0.13 ng/dscm TEQ

- Testing required annually
- Hg measured by sorbent trap (M 30B) or adsorbing solution (M 29)

Mineral Wool / Wool Fiberglass

*Rule Proposal

Glass Furnace	New	Existing
PM	3.3E-1 lb/ton glass	3.3E-1 lb/ton glass
Chromium compounds	6.0E-05 lb/ton glass	6.0E-05 lb/ton glass
Phenol	6.3E-02 lb/ton glass	2.6E-01 lb/ton glass
Methanol	6.1E-02 lb/ton glass	8.3E-01 lb/ton glass
Formaldehyde	8.7E-02 lb/ton glass	1.9-01 lb/ton glass

- Testing required annually
- Chromium compounds measured by adsorbing solution (M 29)
  - Cr source: Furnace refractory

Phosphoric Acid / Phosphate Fertilizer

*Rule Proposal

Phosphate calciner	New	Existing
Mercury	1.4E-02 mg/dscm	1.4E-02 mg/dscm
PM	9.2E-02 g/dscm	9.2 g/dscm

- Testing required annually
- Hg measured by sorbent trap (M 30B) or adsorbing solution (M 29)

Refinery Rule – Subpart UUU

- Method 325 sorbent tube sampling
- 12-24 monitoring sites per facility
- Requires associated meteorological data
- Benzene

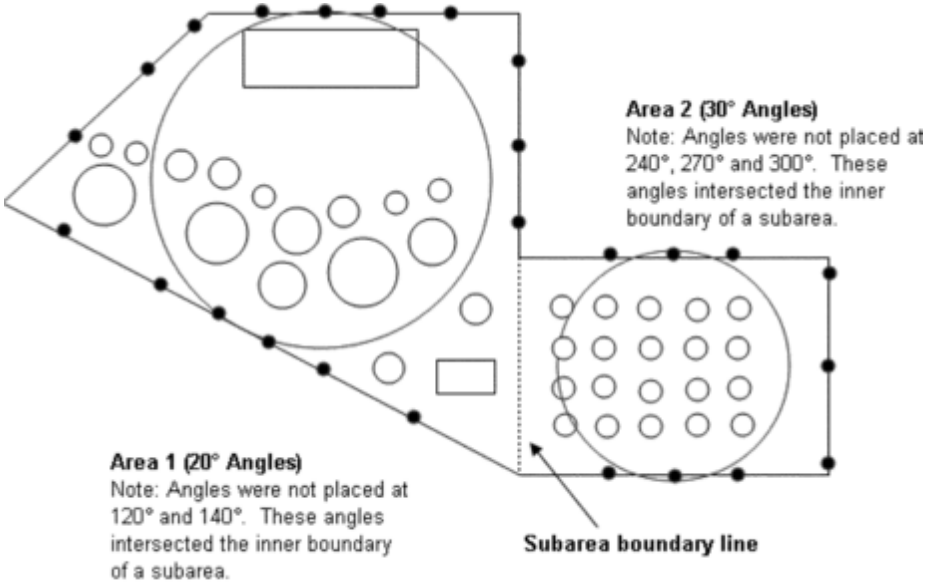

Figure 8.3. Facility Divided into Two Subareas