



Closet MACTs – Is There Something Else to Consider?

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Agenda

- Miscellaneous Organic Chemical Manufacturing MACT (Subpart FFFF)
- Miscellaneous Coatings Manufacturing MACT (Subpart HHHHH)
- Site Remediation MACT (Subpart GGGGG)
- Organic Liquids Distribution MACT (Subpart EEEE)
- Startup, Shutdown and Malfunction Plans (SSMP)



Subpart FFFF

National Emission Standards for
Hazardous Air Pollutants: Miscellaneous
Organic Chemical Manufacturing



Applicability Criteria

1. Plant site is a major source of HAP
2. Miscellaneous Organic Chemical Manufacturing Process Unit (MOCPU) with associated equipment that is used to manufacture any material or family of materials as described in next slide
3. Process unit processes, uses, or produces organic HAP, HCl, HF, or Cl₂
4. Process unit is not subject to another MACT standard
 - ◆ Exception: Batch process vents at HON facilities



Material or Family of Materials

- Organic chemical(s) classified under the 3-digit SIC codes:

282	283	284	285
286	287	289	386

- Organic chemical(s) classified under the NAICS code 325



New/Existing Affected Source

- New or reconstructed source
 - ◆ Commenced construction or reconstruction of an affected source after April 4, 2002
 - ◆ Commenced construction or reconstruction of a dedicated MCPU that is a major source in itself after April 4, 2002
- Existing source
 - ◆ Not new or reconstructed



Compliance Timeline

- Existing sources:
 - ◆ For existing source comply no later than November 10, 2006
- New / Reconstructed sources:
 - ◆ Comply upon startup or November 10, 2003, whichever is later



Emission Points Included in the Affected Source

- Process Vent
 - ◆ Batch vs. Continuous
- Storage Tank
- Loading Rack
- Waste Management Unit
- Equipment Leak
- Heat Exchange Systems



General Applicability Requirements

- There is a first tier of applicability (a De minimis, if you may) for emission points
 - ◆ 0.005 wt. % HAP for continuous process vent
 - ◆ 50 ppmv HAP for batch process vents
 - ◆ Annual average concentration of total partially soluble and soluble HAP compounds of at least 5 ppmw and a flow rate of at least 0.02 liters/min for wastewater streams
 - ◆ Annual average concentration of total partially soluble and soluble HAP compounds of at least 10,000 ppmw at any flow rate for wastewater streams



General Control Requirements

- The second tier of applicability (Group 1/Group 2 classification) determines controls
- Group 1 emission points require controls
 - ◆ Treatment and vapor suppression (cover, fixed roof and/or vapor controls) requirements for Group 1 wastewater streams
- Applicability (Group 1/Group 2 determination) and control requirements are more stringent for emission points at new sources
- Control requirements vary for halogenated vs. non-halogenated vent streams



General Control Requirements (contd.)

- Leak Detection and Repair (LDAR) requirements for closed vent systems
- Monitoring for equipment leak components and sampling for leaks for heat exchange systems



Example--Process Vent Control Options

- Comply with one of the following options:
 - ◆ A flare that complies with 63 subpart A
 - ◆ Reduce HAP emissions by > 98 or 95 weight %
 - ◆ Reduce to an outlet organic HAP or TOC concentration of < 20 ppmv
 - ◆ Control using a permitted hazardous waste incinerator or a boiler or process heater burning hazardous waste



Subpart HHHHH

National Emission Standards for
Hazardous Air Pollutants: Miscellaneous
Coatings Manufacturing



Applicability Criteria

- Plant site is a major source of HAP
- Manufactures coatings
- Process, use, or produce HAP
- Miscellaneous coating manufacturing operations are not part of an affected source under another subpart of this part 63



Coatings

- Any material such as a paint, ink, or adhesive that is intended to be applied to a substrate and consists of a mixture of resins, pigments, solvents, and/or other additives
- Typically described by SIC codes 285 or 289 and NAICS codes 3255 and 3259



Miscellaneous Coating Manufacturing Operations (Affected source)

- Facility-wide collection of the following equipment
 - ◆ Process vessels
 - ◆ Storage tanks for feedstock and product
 - ◆ Transfer racks
 - ◆ Wastewater tanks
 - ◆ Equipment leak components



New/Existing Affected Source

- New or reconstructed source
 - ◆ Commenced construction or reconstruction of an affected source after April 4, 2002
- Existing source
 - ◆ Not new or reconstructed



Compliance Timeline

- Existing source
 - ◆ For existing source, comply no later than December 11, 2006
- New or reconstructed source
 - ◆ Comply upon startup or December 11, 2003, whichever is later



General Applicability Requirements

- There is a first tier of applicability (De minimis) for emission points
 - ◆ 250 gal for process vessel
 - ◆ 50 ppmv HAP for process vessel vent
 - ◆ Annual average concentration of total partially soluble and soluble HAP compounds of at least 1,600 ppmw at any flow rate for wastewater stream



General Control Requirements

- The second tier of applicability (Group 1/Group 2 classification) usually determines controls
- Group 1 emission points require controls
 - ◆ Exception for process vessel vent (no Group 1/Group 2 distinction)
 - ◆ Group 1a and 1b classification for storage tanks
 - ◆ Vapor suppression and treatment requirements for Group 1 wastewater streams
- Applicability (Group 1/Group 2 determination) and control requirements are more stringent for emission points at new sources



General Control Requirements (contd.)

- Control requirements vary for halogenated vs. non-halogenated vent stream
- Monitoring for equipment leak components and sampling for leaks for heat exchange systems



Subpart GGGGG

National Emission Standards for
Hazardous Air Pollutants: Site
Remediation



Applicability Criteria

- Applicability
 - ◆ Major source of HAP emissions
 - ◆ Facility has a site remediation activity
 - ◆ Facility has another source category regulated by a MACT standard



Some Key Exemptions

- If site remediation performed under CERCLA or RCRA
- If site remediation material does not contain any Table 1 HAP
- Subject only to recordkeeping requirements if remediation material contains less than 1 megagram per year (Mg/yr) of Table 1 HAP
- Exemption for 30 consecutive calendar day projects



New/Existing Affected Source

- New or reconstructed source
 - ◆ Commenced construction or reconstruction of an affected source after July 30, 2002
- Existing source
 - ◆ Not new or reconstructed



Compliance Timeline

- Existing source
 - ◆ For existing source, comply no later than October 9, 2006
- New or reconstructed source
 - ◆ Comply upon startup or October 8, 2003, whichever is later



Affected Sources

- Process vents
 - ◆ Vents associated with in-situ or ex-situ remediation processes
- Remediation material management units
 - ◆ Tanks, containers, surface impoundments, oil-water separators, organic water separators, or transfer system
- Equipment leaks
 - ◆ Pumps, valves



General Control Requirements

- Specific control and vapor suppression requirement
 - ◆ Floating roof for tanks
 - ◆ Fixed roof, closed vent system and vapor controls for a fixed roof tank
- Specific emission limit requirement
 - ◆ Reduce Table 1 HAP or TOC emissions from process vents to less than 3.0 lb/hr and 3.1 tpy



General Control Requirements (contd.)

- Determine average VOHAP concentration in process or remediation materials management unit below a certain threshold
 - ◆ Less than 10 ppmw for process vent
 - ◆ Less than 500 ppmw for remediation materials management unit
- If source also subject to another subpart under part 61 or part 63, control emissions of Table 1 HAP per the applicable subpart



Subpart EEEE

National Emission Standards for
Hazardous Air Pollutants: Organic Liquids
Distribution



Applicability Criteria

- Applies to Organic Liquid Distribution (OLD) operations that:
 - ◆ Are located at or part of a major source of hazardous air pollutants (HAP)
 - ◆ Are not subject to another part 63 standard



Definition - *OLD Operation*

- Combination of activities and equipment used to store or transfer organic liquids into, out of, or within a plant site
 - ◆ OLD operations that occupy an entire plant site, or
 - ◆ OLD operations collocated with other industrial operations



Definition – Organic Liquid

- Any non-crude oil liquid or liquid mixture, containing at least 5% by weight organic HAP listed in Table 1 (93 organic HAP listed)
- Crude oil, regardless of HAP composition
- Does not include:
 - ◆ Gasoline, kerosene, diesel, asphalt, and heavier distillate oils and fuel oils
 - ◆ Hazardous waste and wastewater
 - ◆ Wastewater
 - ◆ Non-crude oil liquid with annual average TVP < 0.1 psia



Affected Source

- Collection of activities and equipment used to distribute organic liquids into, out of, or within a facility
- Includes
 - ◆ Storage tanks storing organic liquids
 - ◆ Transfer racks loading or unloading organic liquids into transport vehicles and/or containers
 - ◆ Equipment leak components (pumps, valves, and sampling connection systems) associated with pipelines, storage tanks, and transfer racks
 - ◆ Transport vehicles loading or unloading organic liquids



New/Existing Affected Source

- New or reconstructed source
 - ◆ Commenced construction or reconstruction after 4/2/2002
- Existing source
 - ◆ Everything else, not new or reconstructed



Compliance Date

- Existing source
 - ◆ 2/5/2007 (with exception for floating roof tanks)
- New or reconstructed source
 - ◆ Usually by 2/3/2004 or upon startup, whichever is later



Example--Storage Tank Control Options

- Floating roof* (compliance with subpart WW)
- Closed vent system and control device
 - ◆ Reduce total organic HAP or TOC by 95% wt.
 - ◆ If combustion device, reduce to an exhaust concentration of 20 ppmvd at 3% O₂
- Closed vent system and flare
- Route emissions to fuel gas system or process*

* If vapor pressure \geq 11.1 psia, may not use floating roof or fuel gas system/process options



Startup, Shutdown and Malfunction Plan (SSMP)

- Requirement
 - ◆ Affected sources are required to develop and implement a written SSM plan
- Deadline
 - ◆ The compliance date for the MACT standard
- Requires submittal of plan “promptly” on request of Agency or public



Purpose of SSMP

- During an SSM event, must minimize emissions “to the greatest extent which is consistent with safety and good air pollution control practices”
- Not required to exceed the reductions required by the standard
- To ensure that you “are prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of HAP”



Key Definition – *Malfunction*

- Failure of air pollution control equipment, monitoring equipment, process equipment, or a process to operate in a normal or usual manner that is:
 - ◆ Sudden,
 - ◆ Infrequent, and
 - ◆ Not reasonably preventable
- Event causes, or has the potential to cause, emission limitations to be exceeded
- Does not include failures caused all or in part by poor maintenance or careless operation



Required Regulatory Elements of a SSMP

- Detailed procedures for operating and maintaining the affected source during SSM events in a manner that minimizes HAP emissions
- A program of corrective action for malfunctioning:
 - ◆ Process equipment
 - ◆ Air pollution control equipment
 - ◆ Monitoring systems



Questions?