1.0 Initial Compliance Determination

Overview of Initial Compliance

- Determine affected streams and group status
  - Batch Vents (per §63.1257(D)(2)(i) & (ii))
  - Continuous Vents (per §63.115(d))
  - Halogenated Vents (per §63.115(d)(2)(v))
- Conduct design evaluation (small devices or any size hydrogen halide or halogen HAP device) or performance test (large devices)
- Demonstration
  - Worst-case conditions for process vents
  - Representative conditions for wastewater treatment units and vent control devices
  - Establish monitoring parameter levels

(Continued)

Overview of Initial Compliance

- Typically, calculate uncontrolled emissions from each process vent (batch only)
- Initial inspections for emissions suppression devices (e.g., covers, roofs, closed-vent systems)
- For condensers, may use provisions of 63.1257(d)(3)(i)(B)
- For P2, calculate and demonstrate target annual HAP and VOC factors (35% of baseline level)
- For Emissions Averaging, demonstrate debits and credits under representative operating conditions

Compliance Timeline

Options for Process Vents, Storage Tanks, and Wastewater Vents, and Transfer Racks
Initial Compliance for Flares

- Flares (§63.987 & §63.11(b))
  - Initial Assessment
    - VE
    - Net Heating Value
    - Actual Exit velocity
    - Presence of operating flame or pilot monitors

- Closed Vent System (§63.983)
  - Install Flow indicator
  - Secure Bypass line
  - Conduct Initial Inspection via Me 21

Initial Compliance with Alternative Standard

- Meet §63.1258(b)(5)(i) on compliance date
- Install CEM on stack for:
  - TOC
  - HCl
  - FTIR or
  - Alternative with approved monitoring plan per §63.8

(Continued)

Initial Compliance Demonstration for Alternative Standard

- Meet §63.983 for CVS
- Install, calibrate and operate flow monitor per §63.2460(c)(7), if flow intermittent
- If complying with 95% hydrogen halide and halogen reduction:
  - Install and operate CPMS for scrubber per §63.2450(k)
  - Conduct performance test and set limits per §63.994
  - Submit results of initial compliance determination in NOCSR

Periodic Verification for Control Devices Controlling < 1 tpy

- Establish operating limits for parameters to measure that verify proper operation
- Submit rationale in Precompliance Report
- Measure and record once per averaging period (daily or block)
- If not measured continuously, request approval in the Precompliance Report

Requirements for Batch Process Vents
Requirements for Continuous Process Vents

1. Vapor balancing
   - Use §63.1253(v), except 95% reduction
   - Pressure relief setting >2.5 psig on the storage tank
   - Certification from offsite cleaning/reloading facility of compliance with the standard
   - Records of DOT certification of tank trucks and railcars

2. Percent reduction or outlet concentration
   - Conduct performance test or design evaluation at the reasonably expected maximum filling rate
   - A test for process vents may be used to demonstrate compliance

3. Flare
   - Use 40 CFR subpart SS §63.983(CVS) and §63.987(flare)

4. Floating roof (vapor pressure <76.6 Kpa)
   - Use 40 CFR subpart SS §63.982(d)

5. Fuel Gas System or Process
   - Use 40 CFR subpart SS §63.982(a)

Initial Compliance for Storage Tanks and Transfer Racks

- If Routed to FGS, no initial determination
- If Routed to Process
  - Initial assessment to demonstrate that regulated material meets one of conditions at §63.984(b)(2)

Initial Requirements for Wastewater Treatment

- Either a design evaluation or a performance test is required for nonbiological treatment processes and for closed biological treatment processes
- A performance test is required for open biological treatment processes
- Offsite Management and Treatment Certification
  - RCRA Treatment needs no certification
  - Table 9 HAP streams
  - Treat in compliance with HON requirements
- These treatment units are exempt from either performance tests or design evaluation:
  - RCRA waste management units
  - Enhanced biological treatment units
  - Design Steam Strippers

Miscellaneous Organic Chemical Manufacturing

2.0 Design Evaluations, Performance Tests, and Engineering Assessments

- Non-standard procedures and methods used to calculate uncontrolled emissions, or to define process vents
- Engineering assessments require preapproval via the precompliance report
- Examples
  - Use of previous test results, bench-scale or pilot-scale test data
  - Use of flow rates or HAP emission rates implied within a permit limit
  - Design information such as material balances, design flow rates, or concentration estimates
**National Emission Standards for Miscellaneous Organic Chemical Production**

### 3.0 Ongoing Compliance Determination

**Emission Profile**
- **By process**
  - Most difficult; must consider all emission episodes that can vent to the control device in any given hour (see example – 53 lbs/hr)
- **By equipment**
  - Based on the limitations of the equipment; finding the highest emitting equipment, like a dryer, and using the most volatile HAP even though this operation is not currently conducted to conduct a test
- **By limitations of the capture and conveyance system**
  - Example: testing at the set point limits for bypasses or at the maximum flow based on the fan

**Design Evaluation Requirements – Combustion Devices**

- **Start**
  - Document that these ventilation exist
- **Vent internal heat exchanger and exhaust zones**
  - Vent internal heat exchanger and exhaust zones
- **Vent internal heat exchanger and exhaust zones**
  - Vent internal heat exchanger and exhaust zones
- **Design evaluation requirements on units**
  - Design evaluation requirements on units
- **Design evaluation requirements on units**
  - Design evaluation requirements on units
- **Design exhaust stream organic HAP concentration**
  - Design exhaust stream organic HAP concentration
- **Design exhaust stream organic HAP concentration**
  - Design exhaust stream organic HAP concentration
- **Design exhaust stream organic HAP concentration**
  - Design exhaust stream organic HAP concentration

**Design Evaluation Requirements – Non-Combustion Devices**

- **Start**
  - Ensure internal heat exchanger and exhaust zones
- **Carbon adsorber**
  - Free and mobility and composition
- **Carbon adsorber**
  - Free and mobility and composition
- **Carbon adsorber**
  - Free and mobility and composition
- **Carbon adsorber**
  - Free and mobility and composition
- **Carbon adsorber**
  - Free and mobility and composition

**Overview of Ongoing Compliance Requirements**
- CPMS per subpart SS
- Continuously monitor (15-minute) for all control devices with loads >1 tpy
- Daily (24-hour) or block averaging periods for control devices
- Develop a demonstration strategy for devices <1 tpy; submit in Precompliance report
- Periodic inspections of waste management unit suppression devices and floating roofs
- For waste treatment units: parameter monitoring at frequency specified by permitting authority
- For P2, calculate annual rolling average values of HAP and VOC target annual factors
- For Emissions Averaging, calculate quarterly and annual credits and debits under actual operating conditions
Establish Operating Limits
- Establish per initial compliance demonstration, or
- Establish for other conditions (submit for approval in Precompliance report)
- May establish separate levels for different emissions episodes
- Correct for supplemental gases

Overview of Monitoring Requirements for Control Devices

<table>
<thead>
<tr>
<th>Control device</th>
<th>Monitoring equipment required</th>
<th>Parameters to be monitored</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon adsorber</td>
<td>Temperature monitoring device installed at Flare</td>
<td>Carbon adsorber exit temperature</td>
<td>Every 15 minutes</td>
</tr>
<tr>
<td>Flare</td>
<td>Temperature monitoring device installed at Boiler or process heater</td>
<td>Boiler exit temperature</td>
<td>Every 15 minutes</td>
</tr>
</tbody>
</table>

Monitoring for Vent Streams

<table>
<thead>
<tr>
<th>Control device</th>
<th>Monitoring equipment required</th>
<th>Parameters to be monitored</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrubber</td>
<td>Temperature monitoring device installed at outlet to atmosphere</td>
<td>Scrubber outlet temperature</td>
<td>Every 15 minutes</td>
</tr>
<tr>
<td>Thermal incinerator</td>
<td>Temperature monitoring device installed at exit</td>
<td>Incinerator exit temperature</td>
<td>Every 15 minutes</td>
</tr>
</tbody>
</table>

Overview of Monitoring Requirements for Waste Management Units

<table>
<thead>
<tr>
<th>Control device</th>
<th>Monitoring equipment required</th>
<th>Parameters to be monitored</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrubber</td>
<td>Temperature monitoring device installed at outlet to atmosphere</td>
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<td>Temperature monitoring device installed at exit</td>
<td>Incinerator exit temperature</td>
<td>Every 15 minutes</td>
</tr>
</tbody>
</table>

Monitoring for PM HAP
- Install, calibrate, maintain and continuously operate bag leak detection system per 63.1366(b)(xi)
- Establish sensitivity and range, averaging period, alarm set point and alarm delays in Precompliance Report
- Install alarm system

Monitoring for Waste Management Units
- Leak inspection requirements for vapor suppression equipment as in HON
- Semi-annual visual inspections
- Annual visual inspections or inspection using Method 21 for closed-vent systems
- Leak is detected if reading is >500 ppmv
- Monitoring for treatment units as in HON
- Monitor TSS, BOD, and biomass concentration for biotreatment units. Permitting authority approves the monitoring frequency
- Use Precompliance report to request approval to monitor appropriate parameters for nonbiological treatment units
4.0 Alternative Standard

- Option for process vents and storage tanks
- Requires outlet concentration of:
  - 20 ppmv for combustion device
  - 50 ppmv for noncombustion device
- Demonstrate using a CEM
- Correct concentration for supplemental gases
- Minimizes potential number of violations

(Continued)

Alternative Standard – Ongoing Compliance

1. Equipment stack with CEM for:
   - TOC
   - HCl (halides and halogens)
2. If complying with 95% reduction for hydrogen halides and halogens, monitor site specific operating limits of scrubber
   - if scrubber flow intermittent, monitor flow indicator

Pollution Prevention Alternative

- Allowed for any MCPU for which initial startup occurred before April 4, 2002
- Allows compliance with the standards by demonstrating reductions in HAP usage, per unit of product
- Uses production indexed annual consumption factor (kg HAP/kg product)

(Continued)

5.0 Pollution Prevention Option

- Reduce the consumption factor by at least 65% from a 3-year average baseline, beginning no earlier than 1994-1996
- For any reduction in HAPs that are also VOC's, must demonstrate an equivalent reduction in the production indexed VOC consumption factor on a mass basis
- For any reduction in the HAP factor achieved by reducing a non-VOC HAP, the VOC factor cannot increase

(Continued)
Pollution Prevention Alternative

- Must begin and end with the same products
- Cannot comply by eliminating steps by transferring offsite
- Cannot merge solvent recovery steps from off-site to part of a process, nor merge nondedicated formulation or solvent recovery processes with other processes
- All HAP that are generated in the MCPU that are not part of the average must be controlled per the requirements in Tables 1 through 7

Initial Compliance Demonstration

1. Initial: P2 Demonstration Summary
   - Submitted with precompliance report
   - Describes method of tracking consumption and production and provides supporting documentation
   - Determines baseline factors and target annual factors

Continuous Compliance Requirements

- Calculate annual target HAP and VOC factors
- Record annual rolling averages of HAP and VOC annual factors
  - Continuous processes – every 30 days
  - Batch – every 10 batches

National Emissions Standards for Miscellaneous Organic Chemical Manufacturing

6.0 Emissions Averaging

Emissions Averaging

- Existing Sources Only
  - Process Vents (batch and continuous)
  - Storage Tanks
  - Transfer Racks
  - Wastewater

Emissions Averaging

- Batch process vents in an MCPU collectively considered one vent for purposes of EA
- Estimate uncontrolled emissions for batch vents per §63.1257(d)(2)(i) & (ii)
- Use HON Emissions Averaging Procedures
National Emissions Standards for Miscellaneous Organic Chemical Manufacturing

7.0 Reporting Requirements

Overview of Reporting Requirements

- Initial Notification
- Precompliance Report
- P2 Demonstration Summary (if applicable)
- Emissions Averaging Report (if applicable)
- Notification of Compliance Status Report
- Compliance Reports, including Startup/Shutdown/Malfunction
- Site-Specific Test Plans

Precompliance Report

- Submit 6 months prior to compliance date of the standard
- Precompliance Report is a preapproval mechanism; the Administrator has 90 days to approve or disapprove
- Should contain:
  - Alternative monitoring requests
  - Setting monitoring parameters outside those established during performance test
  - Periodic verification for control devices with less than 1.0 tpy HAP
  - Engineering assessment for calculation of uncontrolled process vent emissions and for defining process vents
  - P2 Demonstration summary
  - Parameters to monitor for nonbiological wastewater treatment unit
  - Alternative monitoring for NO
  - Fabric/Filter leak detection device operation for PM HAP
  - Practices used to minimize HAP emissions from streams that contain energetic or organic peroxides and rationale as to why emissions limits cannot be met

Notification of Compliance Status Report

- Results of applicability determinations, emission calculations, or analyses used to identify and quantify HAP emissions from the affected source
- Results of emission profiles, performance tests, engineering analyses, design evaluations, or calculations used to demonstrate compliance
- Descriptions of monitoring devices, monitoring frequencies, and the values of monitored parameters established during the initial compliance determinations, including data and calculations to support levels established

Compliance Report

- Semiannually per § 63.2520(b)

  Content

  - Summary information
    - Company name and address
    - Certification of accuracy
    - Beginning and ending dates of report
    - If no deviations, statement of no deviations

(Continued)
Compliance Report - Deviations

- If no CMS is used:
  - Total operating time of affected source during reporting period
  - Number, duration, and cause of deviations
  - Operating log for days during which deviations occurred (except for equipment leaks)

When a continuous monitoring system is used:

- The date and time identifying each period during which the CMS was inoperative except for zero (low level) and high level checks
- The date and time identifying each period during which the CMS was out of control
- The date and time of commencement and completion of each deviation that occurs during startups, shutdowns, and malfunctions of the affected source, or other period
- Summary of the total duration of the deviation during the reporting period, and the total duration as a percentage of the total operating time of the affected source during the reporting period
- A breakdown of the total duration of the deviations during the reporting period into those due to SS&M, control equipment problems, process problems, other known causes, and other unknown causes
- A summary of the total duration of the CMS downtime during the reporting period, and the total duration as a percentage of the total operating time of the affected source during the reporting period

(Continued)

Compliance Report - Deviations

- An identification of each HAP known in the process stream
- A description of the process units
- A description of the CMS
- The date of the latest CMS audit
- Operating logs for the days on which the deviation occurred
- Operating day or block average values of the monitored parameters for each day(s) during which the deviation occurred

Compliance Report

- Reports of S/S/M during which excess emissions occurred
- New operating scenarios
- Reports of LDAR program
- Results of tank and WW management unit inspections
- CVS bypass and/or car seal breaks
- Records of process units added to PUGs
- Records of primary product redeterminations
- Other applicable records per the referencing subpart
- If there were no out of control periods of the CEM, a statement as such

Compliance Reports – Notification of Process Change

- Description of the process change
- Revisions to any information submitted in NOCSR or subsequent reports
- Information required for addition of processes or equipment
- The following must be submitted 60 days prior to implementation
  - Change to any information supplied in the precompliance report
  - Change in status of control device from small to large
  - Change in status of any emission point from Group 2 to Group 1

National Emissions Standards for Miscellaneous Organic Chemical Manufacturing

8.0 Recordkeeping Requirements
Overview of Recordkeeping Requirements

- Applicability determinations
- Operating scenarios, if applicable
- S/S/M plan, occurrence and duration of malfunctions, and responses to S/S/M events
  - Do not include Group 2 emission points, unless part of emissions average
  - For equipment leaks, S/S/M requirement is limited to control devices and is optional for other equipment
- Equipment operation, as applicable:
  - Monitoring parameter measurements, periods of excess emissions or monitor breakdowns, and other requirements in General Provisions or referencing subparts
  - CPSM calibration checks and maintenance
  - Wastewater HAP concentration per POD
  - Record of each time a safety device is opened

(Continued)

Recordkeeping Requirements – Operating Scenarios

- Description of process and type of equipment used
- Identification of related process vents and emission episodes (those not complying with alternative standard), wastewater PODs, storage tanks, and transfer racks
- Applicable control requirements, on a per vent basis
- Description of control device or treatment used, and description of operating and/or testing conditions

(Continued)

Recordkeeping Requirements – Group 1 Batch Process Vents

- Records as to whether each batch was a standard batch
- Estimate of uncontrolled and controlled emissions for each nonstandard batch

(Continued)

Recordkeeping Requirements – Group 1 Batch Process Vents and Uncontrolled Hydrogen Halide Vents < 1000#/yr Sum of all Vents

- Record of each day the batch was completed
- Record of whether each batch was a standard batch
- Estimate of uncontrolled and controlled emissions for each batch that is considered a nonstandard batch
- Records of daily 365-rolling summations of emissions, or alternative records that correlate to emissions, reconciled monthly

(Continued)
Recordkeeping Requirements - PUGs

- Description of the MCPU and other process units in the initial PUG per §63.2535(l)(1)(v)
- Rationale for including each MCPU and other process unit in the initial PUG
- Calculations used to determine primary product for the initial PUG
- Description of process units added to the PUG after the creation date and rationale for including them
- Calculation of each primary product redetermination

Miscellaneous Organic Chemical Manufacturing

- 9.0 Miscellaneous Compliance

Miscellaneous Compliance

- No excused excursions
- Data collected during SS&M included in averages
- Cannot use flares for halogenated vents
- Cannot measure TOC to demonstrate compliance with percent reduction
- Opening safety devices is allowed at any time to avoid unsafe conditions

Miscellaneous Compliance

- Energetics and organic peroxides that cannot meet the applicable limits for safety reasons must substantiate in the Precompliance Report and provide procedures to be implemented to minimize emissions
- For Process Condensers, may measure receiver temperature in lieu of measuring exhaust gas temperature
- Must perform retest within 180 days of any change in worst case conditions