

# AIR/COMPLIANCE NEWS UPDATE

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## ACCI WELCOMES BILL STANZIANA

Air/Compliance Consultants, Inc. (ACCI) is pleased to announce the addition of Mr. William Stanziana to our growing professional air quality staff. Mr. Stanziana has more than 24 years of extensive experience in nearly all aspects of air quality assessment, including ambient air, source testing, capture efficiency testing, indoor air quality, quality assurance, meteorological monitoring, air permitting, and industrial hygiene. He has managed projects for a variety of clients in a wide array of industry sectors including coatings, power and chemical. Prior to consulting, Mr. Stanziana worked for the Allegheny County Bureau of Air Pollution Control.



## EPA FINALIZING NESHAP/MACT STANDARDS: ORGANIC LIQUIDS DISTRIBUTION (NON-GASOLINE)

(40 CFR PART 63 SUBPART EEEE) (Not Yet Published)

**Author: Nancy M. Hirko, Senior Environmental Engineer, ACCI**

The EPA will soon publish the National Emission Standards for Hazardous Air Pollutants (NESHAP) rules for Organic Liquids Distribution (OLD), excluding gasoline. A preview of the final rule is located on the EPA's Technology Transfer Network at <http://www.epa.gov/ttn/oarp/t3pfpr.html>. (8/27/03)



The source category involves distribution of organic liquids (non-gasoline) into, within, or out, of a plant site. The OLD operations must be located at plant sites that are major sources of hazardous air pollutant (HAP) emissions. Potential OLD sources include storage operations if not covered by another NESHAP, and transfer operations into or out of tanks or transfers to cargo tanks, containers or pipelines. The rule has provisions for monitoring equipment leaks.

Excluded activities are R&D facilities, oil and natural gas production facilities that meet the source definition in 40 CFR Part 63, Subpart HH, and natural gas transmission and storage facilities that meet the source definition in 40 CFR Part 63, Subpart HHH. A major HAP facility is one that emits or has the potential to emit 10 tons per year of any 1 HAP or 25 tons per year of a combination of HAPs.

Organic liquids are defined in the rule as non-crude oil liquids that contain at least 5% by weight of any of the 98 organic HAPs or HAP combinations listed in the rule and have a total liquid vapor pressure of 0.1 psia or greater. This definition does not include  
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**EPA Finalizing NESHAP/MACT... Organic Liquids (Cont'd)**

gasoline, fuels used or dispensed on-site, kerosene (No. 1 distillate oil), diesel (No. 2 distillate oil), asphalt, heavier distillate and fuel oils, hazardous waste, wastewater, and ballast water. Controls will be required for storage tanks greater than or equal to 5,000 gallons in capacity, if the stored liquid is not crude oil, and if the annual average true vapor pressure of the total organic HAP of the liquid is  $>4$  psia. Operators will be required to install closed vent systems and control devices that can meet a 95% control efficiency for the organic HAPs. Sources can demonstrate that total organic compounds (TOC) are an appropriate surrogate for organic HAPs. As an alternative, sources can exhaust the tank emissions to a combustion control device that meets an exhaust level at the outlet of 20 ppm<sub>v</sub> of organic HAP. Compliance can also be achieved by capturing and routing emissions to a fuel gas system or a process located at the facility. Additionally, tank owners can meet a work practice standard (WPS) by use of an internal or external floating roof.

The rule will apply to transfer racks that process over 800,000 gallons of organic liquids per year. Operators will be required to install a closed vent system and control device to demonstrate a control efficiency of 98% for organic HAPs. TOC can be used as a surrogate for HAP if demonstrated. As an alternative, combustion control devices can meet a 20 ppm<sub>v</sub> outlet concentration limit (as TOC or HAP).

Sources must undertake a leak detection and repair program (LDAR) for pumps, valves and sampling connections that are in organic liquid service at least 300 hours per year. Sources may also be required to perform leak tightness testing on transport vehicles at affected transfer rack locations.

Sources will be required to establish capture and control system operating parameters during an initial performance test, a Startup, Shutdown, and Malfunction (SSM) Plan, and possibly a control device design evaluation.

Sources would also be subject to initial notification requirements, notification of performance testing, notification of compliance status and periodic (semi-annual) reporting and several recordkeeping requirements.

## REVISED CONTINUOUS SOURCE MONITORING MANUAL (CSMM) ISSUED FOR PA

Author: Sharon Diday, Project Engineer, ACCI



Commonwealth of Pennsylvania – Department of Environmental Protection – Bureau of Air Quality – Division of Source Testing and Monitoring – Continuous Source Monitoring Manual (Revision No. 7, 2003)

On September 1, 2003, PADEP issued the latest revision of the Continuous Source Monitoring Manual (CSMM). The manual can be downloaded at the following website <http://www.dep.state.pa.us/dep/deputate/airwaste/aq/cemspage/cemshome.html>. This manual contains design specifications, performance specifications, test procedures, data storage and reporting requirements, quality assurance criteria, and administrative procedures for obtaining department approval of CEMS required pursuant to PADEP Rules and Regulations. Some of the changes to the CSMM are as follows:

- Added instruction for requesting alternatives to specifications.
- Changes to software are subject to applicable requirements of the Quality Assurance section in the manual.
- Phase I submittals are required to be sent both to the Bureau of Air Quality Regional and Central offices.

A new outline format has been developed for Phase I submittals

- Recent changes to Performance Specification-1 (Opacity Monitors) have been incorporated.
- Clarified calibration error calculation.
- Modified calculation procedures for Relative Accuracy and Calibration Error determinations in units of measurement for low Reference Method average concentrations.
- Aborted test results or diagnostic testing must be reported for existing, previously approved monitoring systems.

Note that any new CEMs to be installed after September 1, 2003, must meet the new specifications (Rev. 7). Sources with existing CEMs can “opt in” to take advantage of the new changes. A Phase I submittal would be required for department approval prior to adoption for the “opt in” source.



## EPA PROPOSING TO EXCLUDE 4 COMPOUNDS FROM VOC LIST

**Author: Nancy M. Hirko,  
Senior Environmental Engineer, ACCI**

EPA proposed in the Federal Register on September 3, 2003 to revise the definition of volatile organic compounds (VOCs). EPA plans to exclude the following from the definition of VOC:

- 1,1,1,2,2,3,3-heptafluoro-3-methoxy-propane
- 1,1,1,2,3,3,3-heptafluoropropane
- methyl formate

These three compounds have been approved by EPA's Significant New Alternatives Program (SNAP) as acceptable substitutes for ozone-depleting substances (ODS).

The fourth compound not yet SNAP approved is:

- 3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane (WOW!)

These compounds are used mainly as refrigerants, fire suppressants, aerosol propellants, or blowing agents. However, EPA states that the four compounds will continue to be classified as VOC for purposes of all record keeping, emissions reporting, and inventory requirements which apply to VOC. EPA wants to continue to keep collecting data on these and other "negligibly reactive" compounds to determine if significant, aggregate releases of these compounds do indeed contribute to ground-level ozone formation (smog) and ozone transport.

## VOC TESTING – PART 1

**Author: Robert N. Frey, Vice President, ACCI**



Testing for volatile organic compounds (VOCs) is often confusing for a variety of reasons. State and federal regulations are based on VOC emissions as defined by rule. However, there is no straightforward way to measure VOC emissions to match the VOC definition used in the rules, since there is no way to separate compounds by photoreactivity or vapor pressure. To select the best technical approach for measuring VOCs, several factors are evaluated, including, the specific VOCs being measured (chemical composition, concentration range, chemical properties), and the source characteristics (moisture, temperature, percent [%] carbon dioxide [CO<sub>2</sub>], matrix effects).

Specifically, three USEPA Methods are predominant (USEPA Methods 18, 25, and 25A). The standard expectation is that the chemical composition and properties of the VOCs is unknown, the concentration of VOCs will be low but variable and the source properties (temperature, moisture content, and percent CO<sub>2</sub>) are defined. For most applications, Method 18 alone is not specified, since the regulatory requirements typically include all VOCs present. Two general sampling approaches are typically followed. Method 25A would provide real-time total VOC data and would be the most appropriate method, with whole gas Method 18 samples collected to determine the exempt VOCs methane and ethane.

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## MISCELLANEOUS NEWS

- On June 4, 2003, EPA proposed to remove methyl/ethyl ketone (MEK) from the list of regulated hazardous air pollutants. This could have broad implications for sources to comply with or avoid MACT regulations.
- The EPA will soon publish several MACT standards in addition to those reviewed in this newsletter. These include:
  - Chemical recovery combustion Sources at Kraft, Soda, Sulfitite, and Stand-alone Semi-chemical Pulp Mills
  - Miscellaneous Metal Parts and Products (surface coating)
  - Site Remediation
  - Taconite Iron Ore Processing
  - Miscellaneous Organic Chemical Manufacturing (MON)
  - Mercury Cell Chlor-Alkali Plants
  - Primary Magnesium Refining
  - Iron and Steel Foundries
  - Plastic Parts and Products (surface coating)
  - Miscellaneous coating Manufacturing
  - Stationary Combustion Turbines
  - Chlorine Production
- The EPA penalties for excess SO<sub>2</sub> or NO<sub>x</sub> for 2004 are up to \$2,963/ton emitted under the Acid Rain and NO<sub>x</sub> Budget Program



**VOC Testing cont'd**

Method 25 provides an alternate approach for integrated VOC testing, but has a higher analytical limit of detection, requires off-site analysis and is problematic with high CO<sub>2</sub> and moisture.

During Method 25A testing, all components of the sampling system are heated to prevent condensation of any hydrocarbons. The analyzer uses a flame ionization detector (FID) supplied by a constant independent supply of combustion air and hydrogen fuel. Any compound with an ionization potential below the flame (12.5 eV) would be detected by the unit and the FID response correlated with a calibration gas to yield a VOC concentration. The unit response is linear for straight chain hydrocarbons and is typically calibrated with methane or propane standards. The unit response is not linear for compounds with electronegative atoms (N, O, F, P, S, Cl, etc).

The Method 25A system is calibrated for a range of operation and challenged after each test to document system calibration. The calibration gases follow the same path as source gases and the quality assurance/quality control (QA/QC) provided by Method 25A is field validated.

Method 18 allows for a variety of approaches and analytical finishes. Specifically, for whole gas analysis of methane, ethane, and oxygen, a Tedlar bag or summa canister is used to collect a whole gas sample of effluent. The bag is analyzed by GC/FID for methane and ethane. A GC/FID analyst can report a total hydrocarbon number from the sample run, but it is not the same as the field Method 25A FID. The primary differences are due to the GC column used to separate the target compounds before the FID. The FID can also be calibrated for each specific compound in GC for higher accuracy. The field Method 25A FID detects all ionizable compounds present; the laboratory Method 18 GC/FID detects only the compounds for which it has been set up and calibrated. The instrument response for all residual hydrocarbons can be referenced to the original methane/hexane calibration to yield a total hydrocarbon number.

Other VOC measurement methods like direct GC/FID or FTIR analysis may be more appropriate for other applications, but that will be discussed in a future article.

In a recent test, ACCI evaluated the emissions from a source using direct GC/FID analysis, Method 25, and Method 25A simultaneously. When emissions were calculated on a common basis: non-methane ethane VOCs (NMEVOC) were not detected by USEPA Method 25A, 0.76 lb/hr as carbon NMEVOC was measured by direct GC/FID and 4.1 lb/hr as carbon NMEVOC was measured by Method 25. All three approaches were performed with additional project QA/QC and all three were representative of the actual site operations.

## **EPA Releases Proposal to Amend Instrumental Test Methods**

**Author: Sherry L. Lindquist,  
Administrative Manager, ACCI**

On September 24, 2003, the EPA released a proposal to amend five instrumental test methods that are used to measure air pollutant emissions from stationary sources. The intended effect of this rule is to harmonize, simplify, and update the test methods. The methods were originally developed for specific industry applications but have since been adapted to general testing applications. These proposed revisions would revoke inconsistencies in equipment and performance specifications so each method would be similar in these respects and have expanded applicability. They are also proposing to add helpful calculation procedures, quality assurance recommendations, and provisions for sampling at low concentrations. For more information go to: <http://www.epa.gov/ttn/oarpg>



## **EPA FINALIZING NESHAP/MACT STANDARDS: SURFACE COATING OF METAL CANS (40 CFR PART 63 SUBPART KKKK)**

*(Not Yet Published)*

**Author: Nancy M. Hirko,  
Senior Environmental Engineer, ACCI**

The EPA will soon publish the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Surface Coating of Metal Cans. A preview of the final rule is located on the EPA's Technology Transfer Network at <http://www.epa.gov/ttn/oarpg/t3pfpr.html>. (8/13/03) The source category includes facilities that apply coatings during any stage of the can manufacturing process to metal cans or ends (including decorative tins) or to metal crowns or closures for any type of can body. Affected sources can include: coating application lines, drying and curing ovens, mixing and thinning areas, and equipment cleaning.

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**EPA Finalizing NESHAP/MACT... Metal Cans (Cont'd)**

The rule will apply to operations that use greater than or equal to 1,500 gallons of coatings per year and is a major source or located at a major source of HAP emissions. A major HAP facility is one that emits or has the potential to emit 10 tons per year of any one HAP or 25 tons per year of a combination of HAPs. The rule will not apply to operations located at an area source. Area sources are those that have the potential to emit HAP emissions, but are not major sources. Facilities can limit a source's potential to emit below major source thresholds to establish area source status.

The rule will apply if coating metal sheets for further processing but will not apply if coating coils for further processing. Coil coating will be covered by another NESHAP – Surface Coating of Metal Coil (Subpart SSSS). This rule will not apply to the coating of pails or drums, which is covered under the Miscellaneous Metal Parts & Products NESHAP – 40 CFR Part 63 Subpart MMMM. R&D equipment or maintenance activities are not applicable to the rule.



Four sub-categories have been identified:

- 1- And 2-Piece D&I Can Body Coating
- Sheetcoating
- 3-Piece Can Body Assembly Coating
- End Coating

Compliance options are either material selection, use of capture and control equipment, or a combination of both. Sources will be required to establish capture and control system operating parameters during an initial performance test and a SSM Plan if that option is used.

If a site has multiple operations, it will be subject to more than one emission limit. Emission limits are proposed for materials used for various operations (lb HAP/gal solids) and for capture and control equipment (% control efficiency or a 20 ppm<sub>dV</sub> THC [as carbon] outlet limit).

All sources will be required to determine the mass of organic HAP and the volume fraction of coating solids in materials used each month. Sources will also be required to develop a WPS plan to minimize emissions from cleaning, storage, transfer, mixing, and waste handling operations. Existing WPS Plans may be used if the rule requirements are satisfied.

Sources would be subject to initial notification requirements, notification of performance testing, notification of compliance status and periodic (semi-annual) reporting and several recordkeeping requirements.

Note that EPA is currently reviewing two petitions and may revise the final rule. One petition requests the de-listing of ethylene glycol n-butyl ether (EGBE) from the list of HAPs and the other petition requests the removal of 2-piece beverage cans from the source category list.



- ACCI was awarded a contract with Perrin Quarles Associates to review Pennsylvania and Federal CEM requirements. A report will be prepared with recommendations for harmonizing Pennsylvania's CEM requirements between the various federal and state programs.
- ACCI was selected in 2003 to receive a Powerlink advisory board. Powerlink is a non-profit organization that serves women owned-businesses that have a woman acting as chief operating officer. Information on Powerlink can be found at <http://www.powerlink.org>.
- ACCI was selected once again this year as one of Pittsburgh's 100 Fastest Growing Companies.
- President Jill Merrill served on a panel to discuss air permitting and regulatory strategies with a delegation from Kazakhstan. The Kazakhstan delegation consisted of representatives from industry and government. They would like to learn from the United States experience in order to implement in getting up their Air Pollution Control Systems in Kazakhstan.

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- Storm Water Management Plans
- Soil and Water Sampling
- Risk Management Plan Development
- Emission Control and Monitoring Assistance
- NESHAP Planning (SSM Plans)

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