



March 16, 2015

Sent via Electronic Mail

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RE: Clarification on Performance Specifications Required for pH Calibration Monitoring Equipment in the National Emission Standards for Hazardous Air Pollutants for Polyvinyl Chloride and Copolymers Production ("PVC MACT")

Dear Ms. Howard:

Following-up on the March 9, 2015 conference call between the Vinyl Institute (VI) PVC MACT Working Group¹ and the Environmental Protection Agency ("EPA"), the Working Group has reviewed applicable standards for performance found in Appendices B and F of CFR Part 60, as well as proposed and as yet un-promulgated additional performance standards and specifically how they may pertain to those devices used to monitor processes in the *National Emission Standards for Hazardous Air Pollutants for Polyvinyl Chloride and Copolymers Production* ("PVC MACT").² The PVC MACT Working Group would appreciate the Agency's clarification on the following:

Several PVC facilities use pH measurement devices to monitor process vent scrubbers. EPA's proposed and as of yet un-promulgated "Performance Standard 17 - Specifications and Test Procedures for Continuous Parameter Monitoring Systems in

¹ In addition to Vinyl Institute ("VI") members Formosa Plastics Corporation, U.S.A., Occidental Chemical Corporation/Oxy Vinyls, LP, PolyOne Corporation, Shintech Inc., and Westlake Chemical Corporation, the PVC MACT Working Group has included non-VI members The Dow Chemical Company and Axiall (formerly Georgia Gulf) Corporation. The Vinyl Institute, Inc., founded in 1982, is a U.S. trade association representing the leading manufacturers of vinyl, vinyl chloride monomer, vinyl additives and modifiers, and vinyl compound materials.

² 77 Fed. Reg. 22,848 (April 17, 2012).

Stationary Sources”³ allows the pH measurement device to be calibrated once per week as specified by Appendix F, 8.7 (2) as an approved calibration frequency for pH or caustic strength CPMS for process vent scrubbers. Can the Agency explain why the calibration frequency required every 8 hours in Table 7 to Subpart HHHHHHH of Part 63 is different than the frequency in PS-17? If not, the Working Group requests clarification of the reason, technical or otherwise, why pH measurement devices used at PVC facilities must be calibrated **at least 21 times more often** than the same devices used at facilities in other MACT source categories as compared with the requirements of PS-17?

While we are not aware that EPA has used the proposed PS-17 in any other MACTs, the Working Group’s cursory review of pH measurement and calibration requirements in other Part 63 Rules in Attachment A shows an inconsistent approach, but none as demanding as that in the PVC MACT.

Indeed, EPA has referenced other, as of yet, un-promulgated Performance Specifications within the PVC MACT, e.g. HCl CEMS in § 63.11925 (c)(1) and Dioxin/Furan CEMS in § 63.11925 (c)(2).

The Working Group also notes that the calibration requirements for pH analyzers in Table 7 are in direct conflict with the requirement in §63.11935(c)(1)(iv) that directs facilities to follow manufacturers’ specifications as referenced in §63.8 herewith:

§63.8 (c) (3) All CMS shall be installed, operational, and the data verified as specified in the relevant standard either prior to or in conjunction with conducting performance tests under §63.7. Verification of operational status shall, at a minimum, include completion of the manufacturer’s written specifications or recommendations for installation, operation, and calibration of the system.

The Working Group requests that EPA resolve this conflict between §63.11935(c)(1)(iv) and Table 7 and PS-17 by recognizing the calibration requirements of manufacturers specifications per 63.8(c)(3) used for measurement purposes of pH and other process parameters.

In EPA’s emissions reductions analysis⁴, the outlet HCl baseline emissions were determined and are shown in Table 2 below. In general, HCl quantities measured at the outlet of process vents correlates with outlet flow rates. In its 2009 S114 Process Vent

³ “Appendix B to Part 60 – Performance Specifications”, pgs. 59985-59993, “Appendix F to Part 60 – Performance Specifications”, pgs. 59993-60002, Federal Register, October 9, 2008,

⁴ Docket number EPA-HQ-OAR-2002-0037-0202

Survey, EPA did not study what frequency pH devices were calibrated, nor in its comments did EPA address the concept that frequency of pH device calibration was correlated to HCl emissions performance. The industry contends that HCl load is more a function of control device load and size, as is generally indicated in Table 2.

| Table 2: HCl Emissions Data from EPA 2009 S114 Request for Process Vent Emissions Testing (Data Extracted from EPA Reference Document, Docket Number EPA-HQ-OAR-2002-0037-0202) | | |
|---|------------------------------|------------------------------|
| Facility | Outlet Max Flow Rate (DSCMM) | Outlet HCl Baseline (lbs/hr) |
| POP | 4.36E-02 | 1.41E-06 |
| POH | 1.13E-01 | 3.79E-06 |
| SHTFP | 1.10E+01 | 2.77E-04 |
| SHTA | 1.43E+01 | 1.83E-04 |
| GGA | 1.07E+01 | 2.47E-01 |
| FPC DE | 1.57E+01 | 3.36E-01 |
| CTLC | 3.43E+01 | 1.61E-01 |
| OVPA | 1.55E+01 | 8.46E-01 |
| DOWMI | 3.44E+01 | No Data |
| WLG | 6.50E+02 | 2.86E-02 |
| FPC TX | 1.36E+02 | 1.67E+00 |
| SHTP | 2.50E+02 | 3.71E+00 |
| FPC BR | 4.10E+02 | 5.04E+00 |
| WLCC | 4.10E+02 | 5.04E+00 |
| GGP | 3.36E+02 | 7.09E+00 |
| OVLADP | 1.05E+03 | 1.85E+01 |

The PVC MACT Working Group appreciates EPA's clarification of this important matter. Please do not hesitate to contact me with any questions.

Sincerely,

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cc: Ms. Penny Lassiter, EPA-RTP
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Enclosure:

Attachment A: Partial Review of pH Measurement and Calibration Requirements in Part 63

Attachment: "Performance Standard 17 - Specifications and Test Procedures for Continuous Parameter Monitoring Systems in Stationary Sources", proposed October 9, 2008, FR 59985-60002.

Attachment A Partial Review of pH Measurement and Calibration Requirements in Part 63

- Subpart VVVVV—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR CHEMICAL MANUFACTURING AREA SOURCES does *not* have a calibration requirement for its mandated pH or caustic analyzers in §63.11496(g)(4)(i). I assume it goes back to §63.8 then, as would Subpart SS and obviously Subpart NNNNN.

§63.11496 What are the standards and compliance requirements for process vents?

(g)(4) *Continuous parameter monitoring.* The provisions in §63.2450(k)(1) through (6) apply in addition to the requirements for continuous parameter monitoring systems (CPMS) in subpart SS of this part 63, except as specified in paragraphs (g)(4)(i) and (ii) of this section.

(i) You may measure **pH or caustic** strength of the scrubber effluent at least once per day for any halogen scrubber within a CPMU subject to this rule.

- Subpart SS —National Emission Standards for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process (referenced in Subpart VVVVV) does *not* have a calibration requirement for its mandated pH analyzer in §63.994(c)(1)(i)

- Subpart NNNNN—National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production. This rule from April 2003 requires the owner/operator to develop a site-specific monitoring plan that directs us to follow the manufacturer's calibration instructions (the circular references take us back to the site-specific monitoring plan in §63.9005(d) and §63.8(c)(3))

§63.9020 What performance tests and other procedures must I use?

**Attachment A (Continued)
Partial Review of pH Measurement and Calibration
Requirements in Part 63**

(e) You must establish all operating limits with which you will demonstrate continuous compliance with the applicable emission limits in Table 1 to this subpart as described in paragraphs (e)(1) through (3) of this section.

(1) If you use a caustic scrubber control device or water scrubber control device and you conduct a performance test, you must establish operating limits according to paragraphs (e)(1)(i) and (ii) of this section. If a series of control devices are used, you must establish separate operating limits for each device.

(i) You must establish the minimum value as the operating limit for scrubber inlet liquid or recirculating liquid flow rate, as appropriate. The minimum value shall be based on the scrubber inlet liquid or recirculating liquid flow rate, as appropriate, values measured during the performance test.

(ii) You must establish the minimum and maximum values as the operating limits for scrubber effluent pH. The minimum and maximum values shall be based on the scrubber effluent pH values measured during the performance test.

§63.9025 What are my monitoring installation, operation, and maintenance requirements?

(a) For each operating parameter that you are required by §63.9020(e) to monitor, you must install, operate, and maintain each CMS according to the requirements in paragraphs (a)(1) through (6) of this section.

(1) You must operate your CMS and collect data at all times the process is operating.

(2) You must collect data from at least four equally spaced periods each hour.

(3) For at least 75 percent of the operating hours in a 24-hour period, you must have valid data (as defined in your site-specific monitoring plan) for at least 4 equally spaced periods each hour.

Attachment A (Continued)

Partial Review of pH Measurement and Calibration Requirements in Part 63

(4) For each hour that you have valid data from at least four equally spaced periods, you must calculate the hourly average value using all valid data or,

where data are collected from an automated CMS, using at least one measured value per minute if measured more frequently than once per minute.

(5) You must calculate the daily average using all of the hourly averages calculated according to paragraph (a)(4) of this section for the 24-hour period.

(6) You must record the results for each inspection, calibration, and validation check as specified in your site-specific monitoring plan.

§63.9005 What are my general requirements for complying with this subpart?

(d) All monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately. For each monitoring system required in this section, you must develop, implement, and submit to the Administrator a site-specific monitoring plan that addresses the installation requirements in paragraphs (d)(1) through (3) of this section, the ongoing procedures in paragraphs (d)(4) through (6) of this section, and the requirements in §63.9025, as applicable. You must submit the plan with your Notification of Compliance Status. Upon request of the Administrator, you must promptly correct any deficiencies in a site-specific monitoring plan and submit the revised plan.

(1) Installation of the continuous monitoring system (CMS) sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device).

(2) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction system.

(3) Performance evaluation procedures and acceptance criteria (e.g., calibrations).

Attachment A (Continued)

Partial Review of pH Measurement and Calibration Requirements in Part 63

(4) Ongoing operation and maintenance (O&M) procedures in accordance with the general requirements of §§63.8(c)(1), (3), (4)(ii), (7), and (8), and 63.9025.

(5) Ongoing data quality assurance procedures in accordance with the general requirements of §63.8(d).

(6) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of §63.10(c) and (e)(1) and (2)(i).

§63.8 Monitoring requirements.

(c) Operation and maintenance of continuous monitoring systems. (1) The owner or operator of an affected source shall maintain and operate each CMS as specified in this section, or in a relevant standard, and in a manner consistent with good air pollution control practices. (i) The owner or operator of an affected source must maintain and operate each CMS as specified in §63.6(e)(1).

(ii) The owner or operator must keep the necessary parts for routine repairs of the affected CMS equipment readily available.

(iii) The owner or operator of an affected source must develop a written startup, shutdown, and malfunction plan for CMS as specified in §63.6(e)(3).

(2)(i) All CMS must be installed such that representative measures of emissions or process parameters from the affected source are obtained. In addition, CEMS must be located according to procedures contained in the applicable performance specification(s).

(ii) Unless the individual subpart states otherwise, the owner or operator must ensure the read out (that portion of the CMS that provides a visual display or record), or other indication of operation, from any CMS required for compliance

with the emission standard is readily accessible on site for operational control or inspection by the operator of the equipment.

Attachment A (Continued)

Partial Review of pH Measurement and Calibration Requirements in Part 63

(3) All CMS shall be installed, operational, and the data verified as specified in the relevant standard either prior to or in conjunction with conducting performance tests under §63.7. Verification of operational status shall, at a minimum, include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system.

Subpart HHHHHHH

§63.11935 What CEMS and CPMS requirements must I meet to demonstrate initial and continuous compliance with the emission standards for process vents?

(c) **CPMS.** You must install, maintain, and operate each CPMS as specified in paragraphs (c)(1) through (6) of this section and continuously monitor operating parameters.

(1) As part of your quality control program and site-specific performance evaluation test plan prepared as specified in §63.8(d) and (e), you must prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements specified in paragraphs (c)(1)(i) through (v) of this section and §63.8(d). You are not required to submit the plan for approval unless requested by the Administrator. You may request approval of monitoring system quality assurance and quality control procedure alternatives to those specified in paragraphs (c)(1)(i) through (v) of this section in your site-specific monitoring plan.

(i) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations.

(ii) Sampling interface (e.g., thermocouple) location such that the monitoring system will provide representative measurements.

(iii) Equipment performance checks, calibrations, or other audit procedures.

Attachment A (Continued)

Partial Review of pH Measurement and Calibration Requirements in Part 63

(iv) Ongoing operation and maintenance procedures in accordance with provisions in §63.8(c)(1) and (3).

(v) Ongoing reporting and recordkeeping procedures in accordance with provisions in §63.10(c), (e)(1) and (e)(2)(i).

(2) The monitoring equipment must be capable of providing a continuous record, recording data at least once every 15 minutes.

(3) You must install, operate, and maintain each CPMS according to the procedures and requirements in your site-specific monitoring plan.

(4) You must conduct an initial and periodic site-specific performance evaluation tests of each CPMS according to your site-specific monitoring plan.

(5) All CPMS must meet the specific parameter (e.g., minimum accuracy and calibration frequency) requirements specified in §63.11940 and Table 7 to this subpart.

(6) Monitoring equipment for temperature, pressure, volumetric flow rate, mass flow rate and conductivity must be capable of measuring the appropriate parameter over a range that extends at least 20 percent beyond the normal expected operating range of values for that parameter. The data recording system associated with affected CPMS must have a resolution that is equal to or better than one-half of the required system accuracy.