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Society of Chemical Manufacturers & Affiliates

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Comments in Response to Information Collection Request for Chemical Manufacturing Area Sources (CMAS) NESHAP (Renewal), Docket ID Number EPA-HQ-OECA-2012-0525

and

Petition for Rulemaking Regarding CMAS Rule

To whom it may concern:

This document serves two purposes. First, it provides SOCMA's comments on the U.S. Environmental Protection Agency (EPA)'s Information Collection Request (ICR) regarding the Chemical Manufacturing Area Sources (CMAS) National Emission Standards for Hazardous Air Pollutants (NESHAP).[1] Second, it petitions EPA, pursuant to 5 U.S.C. § 553(e), to initiate a rulemaking to amend the CMAS rules (40 C.F.R. Part 63, Subpart VVVVVV) to allow sources to use pressure testing as a method of leak detection. Adoption of this proposal would significantly reduce the information collection burden imposed by the rule.

SOCMA is the national trade association representing the specialty and fine chemical industry. Founded in 1921, SOCMA represents a diverse membership of chemical companies who manufacture unique and innovative chemistries used in a wide range of commercial, industrial, and consumer products. SOCMA supports its members through programs and services that maximize commercial opportunities, enhance regulatory and legal compliance, and promote industry stewardship.

The Leak Detection and Repair (LDAR) provisions of the CMAS rule currently authorize two methods to determine whether a leak exists in a Chemical Manufacturing Process Unit (CMPU): 1) auditory, visual, and olfactory (AVO) detection; or 2) Method 21, which uses leak detection equipment such as catalytic oxidation, flame ionization, infrared absorption, and photoionization.[2] The LDAR requirements expressly authorize pressure testing to determine whether a leak has been *repaired*, but implicitly do not allow

[1] 84 FR 16258 (April 18, 2019).
[2] *See* 40 C.F.R. § 63.11495(a)(3); *see also* EPA's Method 21 document, https://www.epa.gov/sites/production/files/2017-08/documents/method_21.pdf.

pressure testing to determine whether or not a leak *exists* in the first place.[3] The Response-to-Comments document for the 2012 revision of the CMAS regulations confirms that implication.[4] The first part of this document describes the excessive burden placed on the batch, custom, and specialty chemical industry by the CMAS LDAR requirements – burdens which the current ICR erroneously omits altogether. It also explains how allowing pressure testing as a leak detection method would substantially ameliorate that burden. The second part of this document petitions EPA to amend the CMAS LDAR provisions to allow pressure testing as a means of leak detection. As it explains, doing so would actually be environmentally preferable, and would make CMAS more consistent with the Hazardous Organic NESHAPS, or HON, applicable to major HAP sources.

I. The ICR Completely Fails to Capture the Compliance Burden Imposed by the CMAS LDAR Provisions, Which Is Substantial

A. Current Leak Detection Requirements Are Ill-Suited to Batch Facilities

Batch chemical manufacturing companies are successful because of their ability to maintain flexible and responsive operations in the face of customer demands. Batch processing fulfills needs that continuous chemical manufacturing operations cannot meet. In order to meet a customer's specific needs, chemical manufacturing process units (CMPUs) are frequently configured in unique ways. Many such CMPUs utilize non-dedicated equipment, from reactor vessels down to flexible chemical hoses, fittings, and other portable instruments. Equipment configurations may change from batch to batch of the same product depending on equipment availability, and equipment may even change within the middle of a batch. In cases where several CMPUs are operating at once, equipment (along with fittings and appurtenances) may be moved from CMPU to CMPU.

The currently allowed methods of leak detection (AVO and Method 21) are well-suited to CMPUs where components change infrequently and where fittings are easy to physically tag, such as in commodity chemical production or petroleum refining. However, in circumstances where equipment is regularly changed, and where small, difficult-to-tag fittings are in constant circulation, documenting that components have been inspected quarterly presents a uniquely burdensome challenge. Effective recordkeeping for Method 21 testing relies on the ability to tag all regulated fittings and equipment so that Volatile Organic Compound (VOC) readings can be associated with the correct fitting, and the data is then maintained in a database or a spreadsheet. AVO inspections also present a documentation challenge if fittings change frequently and cannot be tagged to facilitate recordkeeping. Under both of these LDAR methods, one alternative would be to test equipment whenever it is used. Such an approach would eliminate the benefit of the CMAS rule's stated quarterly inspection frequency. It also presents an even greater burden - not just in respect to recordkeeping, but in actual dedicated monitoring time. It could seriously diminish the economic value of a particular batch process.

[3] 40 C.F.R. § 63.11495(a)(3)-(4).

[4] *See* National Emissions Standards for Hazardous Air Pollutant Emissions for Chemical Manufacturing Area Sources – Reconsideration; Summary of Public Comments and Responses on Proposed Rule (77 FR 5422, January 30, 2012) (December 6, 2012), Response 4-2, page 8, available on regulations.gov at EPA-HQ-OAR-2008-0334-0153.

A simple means to alleviate this burden, well suited to batch operations, would be for the Agency to permit the use of pressure testing as a permissible method for leak detection. Industry urged EPA to adopt this approach during the 2012 reconsideration rulemaking for the CMAS rule, emphasizing that it is fundamentally inconsistent for the Agency to endorse pressure testing as a means to confirm that equipment is no longer leaking and yet prohibit it as a means to detect and therefore prevent the leak from occurring in the first place, before any HAPs could be emitted. EPA declined to provide this alternative method for chemical operations, saying without any factual support that it "believes that a successful pressure test is not necessarily an indicator that all leaks were found in a CMPU, leaving open the possibility that leaks will be missed causing excess fugitive emissions that a facility would not be aware of until possibly an unsuccessful pressure test would identify that leak."[5] As explained in Part II below, the Agency's response in fact essentially confirms that pressure testing can actually be more effective than, and environmentally preferable to, AVO or Method 21.[6]

B. The Current ICR Erroneously Reflects No Burden for CMAS LDAR Requirements

As noted above, the CMAS LDAR provisions require all facilities subject to the rule to conduct leak detection inspections of any covered CMPUs at least quarterly, using AVO or Method 21, for any quarter in which the CMPU is in HAP service.[7] Facilities must also keep records of the dates and results of each inspection event, the dates of equipment repairs, and, if applicable, the reasons for any delay in repair.[8] Review of the Supporting Statement for the current ICR,[9] however, reveals that EPA has assigned no burden to this obligation. The document cites the LDAR provision (40 C.F.R. § 63.11495), but only in connection with recordkeeping.[10] Similarly, Table 1 ("Annual Respondent Burden and Cost") lists "Quarterly CMPU management practice inspections," but only as a recordkeeping obligation, which it estimates as requiring three hours, four times a year.[11] Inexplicably, however, it estimates that no respondents would be subject to this burden, stating: "Only new sources must comply over the 3-year period of this ICR. We assume all new sources would be performing the required inspections in the absence of the rule; therefore, no burden is incurred as a result of the NESHAP."[12] This is clearly wrong: the inspection requirement applies to all covered sources, new and existing, and these sources would not conduct these inspections but for the rule.

The ICR estimates that 528 facilities are affected by the CMAS rule and that the total information collection burdens imposed by the rule on the 528 covered facilities are 10,200 hours/year, or 19.3 hours per facility, per year.[13] Dividing that by four yields 4.8 hours per facility, per quarter – again, for all CMAS information burdens. Based on input from our members, SOCMA estimates that a batch facility that reconfigures its

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[5] *See* Response to Comments document, *supra* note 4.
[6] 40 C.F.R. § 63.11495(a)(3)(ii), (iii).
[7] *Id*. § 63.11495(a)(3).
[8] *Id.* § 63.11495(a)(5).
[9] Supporting Statement, Environmental Protection Agency, NESHAP for Chemical Manufacturing Area Sources (40 CFR Part 63, Subpart VVVVVV)(Renewal), available at on regulations.gov at EPA-HQ-OECA-2012-0525-0007.
[10] *Id*. pp. 6-7.
[11] *Id.* p. 18.
[12] *Id*. p. 20, footnote "u."
[13] 84 Fed. Reg. 16258.

CMPUs over the course of a year can easily spend 40 hours per quarter seeking to inspect every vessel and piece of equipment used in a CMPU that quarter, and then ensuring that these inspections are recorded. EPA has consistently estimated that batch facilities make up 75% of CMAS-regulated facilities, or 396 facilities.[14] All such facilities would reconfigure CMPUs in the fashion SOCMA has described since batch manufacturing requires intermittent introduction of frequently changing raw materials, varying process conditions within vessels, and different removal methods. This means that 63,360 hours per year are spent across all covered batch facilities just to comply with the leak detection requirements. Adding the 10,200 hours estimated for other information collection burdens yields an overall annual burden of 73,560 hours for batch facilities.[15]

The ICR estimates that the 10,200 hours/year of compliance time equate to $2,650,000 in costs, thus valuing compliance time at $259.80/hour.[16] Using the more accurate estimate of 73,560 hours, the cost to batch facilities is actually $19,110,888.

II. EPA Should Conduct a Targeted Rulemaking to Authorize Pressure Testing for Leak Detection Under the CMAS Rule

A. Pressure Testing Is Superior to AVO and Method 21

Pressure testing CMPUs at the beginning of a process has several advantages. Most important from an environmental perspective, pressure testing the equipment components with inert gases like nitrogen allows for the detection of leaks *prior* to introducing volatile materials to the CMPU, thereby avoiding consequent leaks and fugitive emissions of potentially environmentally harmful substances. This is in contrast to both AVO and Method 21 inspections, which rely upon the loss of HAPs (or at least VOCs) from the CMPU to detect an actual leak. Pressure testing is also superior to AVO methods, at least, which are uncalibrated and dependent upon the visual, auditory and olfactory acuity of the inspector and to the absence of distracting sounds or smells and poor lighting. Olfactory methods are particularly vulnerable to the inspector becoming habituated to the smell of the chemicals involved in the process and thus not able to notice a leak.

Pressure testing also allows the batch operator to test major pieces of equipment, as well as the connectors and fittings, prior to the process beginning. It is typically performed whenever a CMPU is assembled, as a routine safety measure. If equipment changes are made during a process, AVO monitoring can be used if pressure testing is not possible or safe. In batch operations where production settings are

[14] *See* Technical Memorandum re Control Options and Impacts for Equipment Leaks, Chemical Manufacturing Area Source Standards (Sept. 2, 2008), at 5, available on regulations.gov at EPA-HQ-OAR-2008-0334-0004; Memorandum re Revised Impacts Analysis for Batch Process Vents, Chemical Manufacturing Area Source NESHAP (Oct. 14, 2009), at 2, available on regulations.gov at EPA-HQ-OAR-2008-0334-0075.

[15] In order to assess the *overall* LDAR burden of CMAS, one would also need an estimate of LDAR burdens for the 132 covered continuous process facilities (528 x .25). As noted earlier, EPA estimates 12 hours/year for *recordkeeping* associated with LDAR. SOCMA has not attempted to estimate the additional time required for inspections at such facilities. One would then need to add the 19.3 hours per year per facility that the supporting statement estimates for all other CMAS information burdens.

[16] 84 Fed. Reg. 16258.

in fluctuation, pressure testing can significantly reduce the time dedicated to monitoring and recordkeeping without compromising the integrity of a facility's LDAR program.

B. The HON Authorizes Pressure Testing as a Means of Leak Detection

For these reasons, the Hazardous Organic NESHAP (HON) Equipment Leak Provisions give affected batch facilities the option of using pressure testing as a means of leak detection.[17] Under this option, when equipment is reconfigured in a batch process for the production of different chemical products, the equipment must be pressure tested for leaks before being placed in service. Pressure testing is conducted pursuant to regulatorily-established methods, using either non-HAP material or HAP process fluid for the test.[18] (Facilities commonly make use of water or other insert substances.) These pressure testing procedures must be conducted prior to organic HAPs being first fed into the equipment, minimizing emissions through the detection of leaks before batch operations commence. The option provides that, for pressure or vacuum tests, a leak is detected if the rate of change in pressure is greater than 6.9 kilopascals (1 psig) in 1 hour or if there is visible, audible, or olfactory evidence of fluid loss – thus establishing an equivalence between AVO and pressure testing, contrary to EPA's statement in the CMAS rulemaking Response-to-Comments noted earlier.

SOCMA reminds EPA that the HON NESHAP is a major source rule reflecting the application of the maximum achievable control technology (MACT), whereas CMAS is an area source rule reflecting application of generally available control technology (GACT). The Agency in effect has provided larger, higher-emitting sources in the industry with a more flexible performance standard than it has for less significant area sources under the CMAS rule. This imbalance should be corrected.

C. Recommendation on Pressure Testing for CMAS LDAR

Given the compliance burden imposed by the CMAS rule's restrictive LDAR requirements, SOCMA recommends that EPA revise the rule to allow the use of pressure testing for batch chemical processes at the beginning of each batch in a CMPU. SOCMA also recommends that EPA follow the model of the HON and tailor this new requirement to batch facilities. In particular, the rule should provide that:

- When the batch product-process train is reconfigured to produce a different product, pressure testing is required only for the new or disturbed equipment;[19]
- Pressure testing is not required for routine seal breaks, such as changing hoses or filters, which are not part of the reconfiguration to produce a different product or intermediate;[20] and
- Pressure tests must be run at a specific pressure above the highest normal operating pressure for the batch within the CMPU. If the equipment loses more than 1 psig in 15 minutes or if there is visible, audible, or olfactory evidence of fluid loss, it would fail the pressure test.

[17] 40 C.F.R. § 63.178.
[18] *Id* § 63.178(b)(2), § 63.180(f) or (g).
[19] *See* 40 C.F.R. § 63.178(b)(1)(i),
[20] *Id.* § 63.178(b)(1)(iii).

The Agency could still provide for the use of AVO or Method 21 testing in circumstances where it is not physically possible or safe to evaluate equipment components using a pressure test. SOCMA does not recommend that the Agency revise its periodic recordkeeping requirements, only that the rule allow for the substitution of a pressure test to provide facilities with a more cost-effective means to meet their compliance obligations under CMAS.

The technical memorandum supporting the LDAR provisions of the CMAS rule reveals EPA's estimate that the smallest 71% of covered facilities would produce only 21% of fugitive emissions, but bear 72% of the costs of LDAR compliance.[21] The lack of flexibility in those LDAR requirements represents a significant deficiency in the CMAS rule and a source of significant regulatory burden for batch facilities, especially small ones. Pressure testing represents MACT, is a satisfactory method to test for leaks, is more effective than AVO and more cost effective than Method 21 testing, and would improve environmental, health and safety performance. Allowing it would be a noteworthy deregulatory action by the Agency that would provide the same degree of environmental protection.

SOCMA therefore petitions EPA to initiate a rulemaking to amend the CMAS rule consistent with these recommendations. SOCMA believes that this topic is sufficiently non-controversial that EPA could issue a direct final rule implementing these changes. If no adverse comments were received, the rulemaking could be quickly concluded.

SOCMA appreciates this opportunity to comment on the need for reform of the CMAS rule. SOCMA is eager to work constructively with EPA to reduce unnecessary regulatory burdens in manner that does not compromise environmental protection. We look forward to the Agency's response to this rulemaking petition and to continued collaboration on this matter. Thank you for your consideration.

Respectfully submitted,

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[21] *See* Technical Memorandum, *supra* note 14, at page 4, Tables 1 and 2 (Models 1 and 2).