

**EASTMAN**

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May 18, 2015

**VIA CERTIFIED MAIL/RETURN RECEIPT REQUESTED**

The Honorable Gina McCarthy  
Office of the Administrator  
U.S. Environmental Protection Agency  
WJC West Building  
1200 Pennsylvania Avenue, NW  
Room 3000  
Washington, DC 20460

**Re: Eastman Chemical Company and American Chemistry Council Joint Petition for Reconsideration, Amendment and Administrative Stay of National Emission Standards For Hazardous Air Pollutants: Off-Site Waste and Recovery Operations; Final Rule (80 Fed. Reg. 1428; March 18, 2015); Docket Number: EPA-HQ-OAR-2012-0360**

Dear Administrator McCarthy:

Eastman Chemical Company (Eastman) and the American Chemistry Council (ACC) jointly petition the U.S. Environmental Protection Agency (EPA) to reconsider, amend, and administratively stay the effective date of certain provisions in EPA's final rule dated March 18, 2015 entitled "National Emission Standards For Hazardous Air Pollutants: Off-Site Waste and Recovery Operations," 80 Fed. Reg. 14,248 (the OSWRO Rule). The OSWRO Rule consists of the risk and technology review (RTR) amendments to the original OSWRO final rule that was promulgated on July 1, 1996 (61 Fed. Reg. 34,140). This petition is presented pursuant to Clean Air Act (CAA) Section 307(d)(7)(B) (42 U.S.C. § 7607(d)(7)(B)).

**Background**

Eastman is a major manufacturer of chemicals, fibers, and plastics with over 10,000 employees worldwide. Eastman, and its subsidiaries, own and operate manufacturing facilities in the states of Alabama, California, Florida, Illinois, Louisiana, Maryland, Massachusetts, Michigan, New York, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, and Wisconsin, as well as in Asia, Europe and Latin America. Eastman operates multiple process units that are directly affected by the OSWRO Rule.

ACC is a trade association representing the leading companies engaged in the business of chemistry, and ACC members operate facilities subject to the OSWRO Rule.

Eastman and ACC have actively participated in the development of the OSWRO Rule. Eastman submitted written comments on the proposed rule and also contributed to comments submitted by ACC.

In this petition, we present two issues for reconsideration. First, we hereby raise an objection regarding the equipment leak detection and repair (LDAR) provisions for connectors in the OSWRO Rule. Second, we hereby raise an objection regarding the new monitoring requirements for pressure relief devices (PRDs) on portable containers in the OSWRO Rule.

As explained in detail below, it was impracticable for Eastman or ACC to raise these objections during the comment period for the OSWRO Rule, the grounds for the objections arose after the end of the public comment period for the rule, and the issues raised here are of central relevance to the outcome of the OSWRO Rule. Therefore, Eastman and ACC are submitting this Petition for Reconsideration pursuant to CAA Section 307(d)(7)(B) and the criteria set forth therein.

### **Issue 1: Equipment Leak Provisions for Connectors**

In the OSWRO Rule, EPA adopted mandatory instrument-based leak detection requirements for connectors in gas/vapor and light liquid service. Before the 2015 OSWRO final rule was promulgated, sources could comply with the LDAR requirements of 40 CFR Part 61, Subpart V, or 40 CFR Part 63, Subpart H. Subpart V requires sensory-based monitoring of connectors, while Subpart H requires Method 21 instrument-based monitoring. In the OSWRO proposed rule, EPA presented two LDAR program options. Option 1 consisted of switching from the Subpart V LDAR program to the Subpart H LDAR program without the Subpart H connector monitoring requirements. Option 2 consisted of adoption of the Subpart H LDAR program, including instrument-based monitoring for connectors. In the final rule, EPA adopted Option 2. Subpart H instrument-based monitoring for connectors under Option 2 is unnecessary and unlawful because there would be minimal emission reductions and the connector LDAR program is not cost effective.

#### **A. Method 21 Monitoring Will Not Result in a Statistically Significant Decrease in Emission Rates**

Eastman's experience is that sensory-based monitoring leads to the prompt repair of leaks and reduction of fugitive emissions. For example, Eastman personnel routinely inspect their operating areas and if there is evidence of a leak near a flange (such as liquid on the ground beneath the flange), the leak will be immediately

investigated and repaired. Comments submitted by ACC confirm this is consistent with general industry practice:

ACC believes that the low initial leak rates found when HON compliance commenced is representative of the actual leak rates that result from the combination of connector design, physical properties of the chemicals in service, and the normal housekeeping practices that our member companies employ to repair leaks found through sensory means (sight, sound, smell). Member companies do not wait a fixed period of time to repair leaks. They are normally repaired as they are discovered through sensory methods. Member company operators are trained to recognize the hazards associated with leaks and they are expected to take prompt action when leaks occur.

See Comments of American Chemistry Council at 19 (EPA-HQ-OAR-2012-0360-0061) (ACC Comments). Therefore, under the current OSWRO program, implementation of Subpart V sensory-based monitoring is an effective LDAR method for connectors. And the cost of the sensory program is minimal because facility personnel conduct sensory monitoring during the regular course of their work.

The ACC comments further demonstrate that Method 21 monitoring of connectors results in no appreciable emission reduction benefit when substituted for an existing sensory monitoring program. ACC submitted a report summarizing average connector leak rates at multiple synthetic organic chemical manufacturing industry (SOCMI) facilities under the HON LDAR program. The report shows that there is no statistical difference in leak rates between the initial Method 21 inspections and the subsequent inspections at SOCMI facilities. See ACC Comments, Attachment 1 at 10-12. In other words, instituting a Method 21 monitoring program for connectors will result in no statistically significant decrease in emission rates over the currently-required sensory monitoring at SOCMI facilities.

The ACC report also shows that the equipment leak emission factor for connectors at chemical facilities is much lower than those historically reported by EPA. The mean value of the ACC study was 0.00005 kg/hr/source, whereas the EPA value of 0.00183 kg/hr/source is over 30 times higher. ACC Comments, Attachment 1 at 12-14. The ACC data indicate that when connectors leak, the actual emissions are extremely low.

EPA asserts that no emission reductions occur with sensory-based connector monitoring. In particular, EPA's cost analysis for the OSWRO Rule shows no emission

reductions under the baseline scenario (Subpart V sensory monitoring). See Table 5 of Memorandum from L. Stobert, EC/R, Inc. to P. Hirtz, EPA. February 9, 2015, *Revised Technology Review for the Off-Site Waste and Recovery Operations Equipment Leaks* (EPA-HQ-OAR-2012-0360-0110) (Revised Technology Review). However, this assumption ignores evidence in the record for chemical facilities showing that a sensory based monitoring program leads to emission reductions through timely detection and repair of leaking connectors.

Further, EPA concludes that Method 21 monitoring of connectors under Subpart H would result in emission reductions over the baseline scenario (sensory monitoring). Specifically, in the preamble to the final rule, EPA responded to ACC comments by explaining that emission reductions would occur even though the initial leak frequency would be at the low level of 0.36 percent as reported by the chemical industry and the subsequent leak frequency (i.e. after instituting Method 21 monitoring) would be the same as the initial leak frequency:

We note that the initial leak frequency of 0.36 percent used in the OSWRO analysis is the same as that reported by the commenter's member companies for the HON initial monitoring, and we made the conservative assumption that the subsequent leak frequency after implementation of Method 21 monitoring of connectors would be the same as the initial leak frequency. However, we also assumed, as we have in other rulemakings, that these leaking connectors would be fixed so that the average leak frequency over each monitoring cycle would be equal to one-half of the subsequent leak frequency (i.e., 0.18 percent).

See 80 Fed. Reg. 14248, 14257. Thus, EPA has adopted the position of Eastman and ACC that there is no change from the initial leak frequency to the subsequent frequency. Yet, in asserting that the average leak frequency would be 0.18 percent, or one-half of the subsequent leak frequency, EPA attempts to take credit for emission reductions that do not exist.<sup>1</sup> EPA incorrectly assumes that leaking connectors would

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<sup>1</sup> EPA adoption of a steady state leak frequency followed the approach it adopted in the rulemaking for 40 CFR Part 60, Subpart VVa. See *Standards for Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry; Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries; Final Rule*, 72 Fed. Reg. 64860 (November 16, 2007); Memorandum from K. Parrish and D. Randall, RTI International, to K. Rackley, USEPA. October 30, 2007. *Final Impacts Analysis for Regulatory Options for Equipment Leaks of VOC in the SOCMII* (EPA-HQ-OAR-2012-0360-0097). However, the connector LDAR provisions in that rule have

only be detected and repaired at the time of scheduled monitoring events (which can be between one and four years apart). This assumption is directly contrary to evidence in the record that shows that companies look for and repair known leaks promptly, without waiting for the next cycle of monitoring.

EPA's selection of 0.36 percent as the initial and subsequent leak frequency for connectors is also indicative of the very low likelihood that connectors will leak at all. At a threshold of 0.5 percent leak frequency, the Subpart H LDAR program for connectors allows for a reduced monitoring frequency (from one year to up to four years). See 40 CFR § 63.174(b)(3). This is undoubtedly because EPA recognizes that 0.5 percent is a very low leak frequency. The framework of the OSWRO Rule, with an initial leak frequency that is below the *de minimis* level, shows that a Subpart H Method 21 instrument-based monitoring program for connectors is not appropriate.

With respect to emission factors for SOCOMI facilities, EPA provided the following response to the ACC comments:

We disagree with the commenter's claim that the estimated emissions per connector used in the EPA's analysis are too high. The leak rates used were based on those reported in the Protocol for Equipment Leak Emissions Estimates (EPA-453/R-95-017, November 1995), which determined these leak rates based on screening data from 33 chemical production units and bagging data from 22 chemical production units. We consider this to be relevant and robust data, and the resulting average leak emissions rates are appropriate to use in our analyses.

See 80 Fed. Reg. at 14257.

Eastman and ACC believe that EPA's citation to leak rates in the Protocol for Equipment Leak Emissions Estimates (EPA Protocol Document) is misplaced. The document identifies an initial leak frequency of 3.9 percent prior to Method 21 monitoring, followed by a reduction to a subsequent leak frequency of 0.5 percent. EPA Protocol Document (EPA-HQ-OAR-2012-0360-0080), Table G-1. This model (consisting of an 87 percent reduction in the initial leak frequency) is far different from

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been stayed for nearly seven years. See Footnote 5 and accompanying text. Therefore, EPA's assumption has not been verified by any actual experience with implementation of an instrument-based LDAR program for connectors.

the framework of the current rule, which is based on a steady state leak frequency of 0.36 percent. And the value of 0.36 percent is below the initial leak frequency and the subsequent leak frequency in the EPA protocol document. The EPA Protocol Document should have no bearing on the OSWRO Rule. Therefore, Eastman and ACC believe Method 21 monitoring of connectors will not result in appreciable emission reductions.

### **B. The Method 21 Monitoring for Connectors Is Not Cost Effective**

At various stages throughout the OSWRO rulemaking, EPA prepared cost analyses for the proposed LDAR programs.<sup>2</sup> At the proposed rule stage, EPA estimated the costs of implementing an instrument based LDAR program for connectors at an OSWRO model facility with 1,350 connectors (the median value among the OSWRO facilities surveyed in the ICR). EPA's cost analysis was based on an estimated monitoring cost of \$2.50 per connector. EPA also estimated the annual administrative costs for the model OSWRO facility would be \$4,646, based on 50 hours of work at an hourly labor rate of \$92.92. Based on these and other assumptions, EPA estimated that the incremental cost effectiveness of adopting Option 2 (instrument monitoring) over Option 1 (sensory monitoring) would be \$6,715 per ton. EPA concluded that the Method 21 monitoring program for connectors would be cost effective.

In its comments, ACC submitted a summary of Subpart H LDAR costs for connectors. The summary was based on Eastman's experience with Method 21 monitoring under other NESHAP rules. See ACC Comments, Attachment 2. For example, the implementation of a Subpart H instrument-based monitoring program requires management of change activities associated with detected leaks. Unlike EPA, which assumed that regulated sources would hire outside consultants to address LDAR tasks, Eastman based its LDAR costs on staffing by its own lower-cost engineering technicians and process unit technologists. These projections reflect Eastman's actual experience with implementation of instrument-based monitoring of connectors. Eastman estimated that the annual administrative costs would be \$27,000 which equates to 781 hours of work at an average hourly labor rate of \$34.56. In addition, Eastman demonstrated that the average monitoring cost is approximately \$6.50 per connector

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<sup>2</sup> In its cost analyses for the OSWRO Rule, EPA followed the approach it adopted in the proposed Uniform Standards rulemaking. Revised Technology Review at 5. Eastman and ACC note that EPA never developed a final rule for the Uniform Standards. See Footnote 6 and accompanying text.

because of the typical quantity of connectors and the difficulty in locating and accessing them as compared to other LDAR components such as pumps and valves. Eastman determined the incremental cost effectiveness of instrument-based monitoring of connectors would be \$18,139 per ton.<sup>3</sup> Based on the real-world data presented and submitted to EPA by Eastman, adoption of Option 2 is clearly not cost effective.<sup>4</sup>

In response to the Eastman data, EPA adjusted its cost estimate by incorporating the Eastman monitoring cost of \$6.50 per component. EPA also selectively incorporated some administrative cost data from Eastman. EPA increased its projected administrative workload to only 100 hours but reduced the hourly labor rate to make it equivalent to Eastman's (\$34.56). As a result, EPA's estimate of administrative costs decreased to \$3,456. Based on these two changes, the incremental cost effectiveness was \$6,825 per ton, or nearly equivalent to EPA's estimate at the proposed rule stage (\$6,715 per ton).

EPA's response simply ignores the level of effort that is necessary to implement a Subpart H LDAR program. In the face of real world data showing the actual time required to implement an administrative program is nearly 800 hours per year, EPA's doubling of its estimate of 50 hours to 100 hours makes EPA's assumption of the time it takes to actually implement a connector monitoring program no less arbitrary and out of touch with chemical industry experience. Thus, EPA's decision to exclude most of Eastman's real world cost data from its analysis is arbitrary and capricious.

### **C. EPA Should Reconsider the Connector LDAR Provisions**

EPA's cost justification for the connector LDAR provisions is flawed for multiple reasons. First, EPA selectively incorporated only some of the real world LDAR emissions and cost data supplied by industry and ignored the rest of the data. These

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<sup>3</sup> Eastman used EPA's value for estimated emissions reduction for the limited purpose of demonstrating how Eastman's cost data affected cost effectiveness. However, Eastman and ACC do not consider EPA's estimates of emissions reductions valid.

<sup>4</sup> Eastman and ACC disagree with several other assumptions that EPA made in its cost analysis. For example, EPA applied an escalation factor of 1.7 to the initial and subsequent leak fraction (0.36 percent) at OSWRO facilities due to observations made at refinery LDAR programs where EPA applied an escalation factor of 2.6. 80 Fed. Reg. at 14257. There is no basis for applying any escalation factor to chemical facilities.

data starkly show lower emission reductions and higher costs than EPA's assumptions. They also show that sensory monitoring of connectors is a highly effective low cost method for detecting and repairing leaks. Second, in developing the framework for the connector LDAR program in the OSWRO rule and conducting the related cost analysis, EPA relied extensively on data and methodologies used to support two previous rulemakings. In one of those rulemakings, provisions relating to the monitoring of connectors have been stayed pending EPA's grant of reconsideration to ACC and others that filed both a petition for review and a petition for Agency reconsideration.<sup>5</sup> In the other rulemaking, EPA has never responded to comments and data submitted by ACC and others in opposition to its proposed connector monitoring and it appears that EPA does not intend to finalize that proposed rulemaking.<sup>6</sup> Thus, neither of the rules upon which the OSWRO connector monitoring program is based is in effect now and they offer no insight on the real world application of Method 21 monitoring. Because of these flaws in the rule, EPA should reconsider the connector LDAR provisions in the OSWRO Rule.

## **Issue 2: Requirement to Monitor PRDs on Portable Containers**

In the proposed OSWRO Rule, EPA proposed to require specific PRD monitoring provisions found in 40 CFR § 63.691(c) to the OSWRO affected source. The affected source is defined as the entire group of off-site material management units associated with OSWRO. An off-site material management unit is defined in 40 CFR § 63.680(c) as a tank, container, surface impoundment, oil water separator, organic-water separator, or transfer system used to manage the off-site material. The PRD monitoring provisions apply therefore to both fixed sources, e.g., tanks, and non-fixed or portable sources, e.g., containers. In comments submitted on this proposal, ACC member company, Dow, specifically addressed the impracticability, if not impossibility, of requiring PRD monitoring provisions for containers, which typically are portable, because they are moved frequently and are received from a number of off-site locations. Dow requested that EPA clarify in the final rule that the PRD monitoring provisions do not apply to containers.

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<sup>5</sup> Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry; Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries; Final Rule, 72 Fed. Reg. 64860 (Nov. 16, 2007).

<sup>6</sup> National Uniform Emission Standards for Storage Vessel and Transfer Operations, Equipment Leaks, and Closed Vent Systems and Control Devices; and Revisions to the National Uniform Standards General Provisions, Proposed Rule, 77 Fed. Reg. 17898 (March 26, 2012).



EPA finalized its proposed requirements for PRD monitoring and management as proposed. In response to Dow's concerns about these requirements applying to containers, EPA responded as follows:

We believe the PRD monitoring requirements are necessary for all PRDs to enable operators to identify and minimize emissions from pressure relief events. We note that many OSWRO containers do not have PRDs and that, by definition, devices that are actuated either by pressure of less than or equal to 2.5 pounds per square inch gauge (psig) or by a vacuum are not PRDs.<sup>7</sup>

This response clearly belies knowledge of waste recovery operations and fails to consider the fact that numerous containers of various sizes, with PRDs that release at a higher pressure than 2.5 psig, are frequently found and used at facilities subject to the OSWRO Rule. It is extremely challenging, if not impossible for these facilities to design and implement a monitoring system for portable containers. Given that Eastman and ACC only discovered EPA's erroneous assumptions about containers subject to the OSWRO Rule after the final rule was published and the Response to Comments made available, EPA should reconsider its position on making the PRD monitoring requirements in 40 CFR § 63.691(c) apply to containers, especially portable containers.

### **Conclusion**

For the foregoing reasons, Eastman and ACC respectfully request that EPA initiate the process for reconsideration of the OSWRO Rule to address the issues raised herein. Furthermore, Eastman and ACC request that EPA issue an immediate administrative stay of the equipment leak provisions for connectors and the standards for PRDs on portable containers pending reconsideration of this matter. A stay is necessary to prevent the hardship that Eastman and other ACC member companies will face if the rule remains applicable in its current status.

Thank you for your consideration of this request. If you have any questions regarding this matter, please contact the undersigned using the contact information provided below.

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<sup>7</sup> Summary of Public Comments and Responses on Proposed Rule (79 Fed. Reg. 37850, July 2, 2014), see Response 5.2.1.

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Sincerely yours,

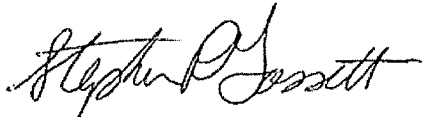
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