U.S. Environmental Protection Agency
Applicability Determination Index

Control Number: 0800032

Category:	NSPS
EPA Office:	Region 4
Date:	04/29/2008
Title:	Alternative Monitoring Procedure for Leak Detection
Recipient:	Reece, Myra
Author:	Banister, Beverly H.
Comments:	

Part 60, VV	SOCMI Equipment Leaks
	VVa

Abstract:

Q: Does EPA approve the use of sensory means (i.e., visual, audible, or olfactory), as an alternative, under 40 CFR part 60, subparts VV and VVa, to using EPA Method 21 for the identification of leaks from equipment in acetic acid service at the Eastman Chemical Company facility in Columbia, South Carolina?

A: Yes. EPA finds that the proposed alternative is acceptable under NSPS subparts VV and VVa. Monitoring results provided by Eastman indicate that leaks from equipment in acetic acid service are more easily identified through sensory methods than by using Method 21 because of the physical properties (high boiling point, high corrosivity, and low odor threshold) of acetic acid and the process conditions at the plant.

Letter:

Ms. Myra Reece, Chief
Bureau of Air Quality Control
South Carolina Department of Health and Environmental Control 2600 Bull Street
Columbia, South Carolina 29201

Dear Ms. Reece:

The purpose of this letter is to provide you with a determination regarding an alternative monitoring proposal that Eastman Chemical Company (Eastman) submitted to the Environmental Protection Agency (EPA) Region 4 and to your agency. Eastman's proposal is for equipment at the company's Columbia, South Carolina plant that is subject to New Source Performance Standards (NSPS), Subpart VV - "Standards of Performance for Equipment Leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI) for Which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and On or Before November 7, 2006" and NSPS Subpart VVa - "Standards of Performance for Equipment Leaks of VOC in the SOCMI for Which Construction, Modification, or Reconstruction Commenced After November 7, 2006." Eastman proposes to use sensory means (i.e., visual, audible, or olfactory) as an alternative to EPA Method 21 for identifying leaks from equipment that is in acetic acid service. Based upon our review of information provided by Eastman, we have concluded that leaks from equipment in acetic acid service at the

Columbia plant can be more easily identified through sensory methods than by using Method 21. Therefore, the company's alternative monitoring proposal is acceptable to EPA Region 4.

The types of equipment covered by the leak detection and repair standards in Subparts VV and VVa are pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, and connectors. Under these regulations, owners/operators are required to periodically monitor equipment in VOC service. When leaks are detected, a first attempt at repair must be initiated within five days, and repairs must be completed within 15 days. The two methods of detecting leaks under Subparts VV and VVa, depending on the situation, are either using an instrumental analyzer that satisfies performance requirements in EPA Method 21 or using sensory methods that identify leaks through visual, audible, or olfactory means. In its alternative monitoring plan, Eastman proposed to use sensory methods to identify leaks for regulated equipment in acetic acid service where Subparts VV and VVa require the use of EPA Method 21. Under Eastman's proposal, equipment that contains or contacts a process fluid where acetic acid comprises at least 50 percent by weight of the VOCs contained in the mixture would be classified as being in acetic acid service.

Eastman's alternative monitoring proposal includes a summary of leaks that have been detected from equipment in acetic acid service by using sensory or instrument methods during a time period of nearly five years. All of the detected leaks were found by the use of sensory methods, and none were found by using Method 21. Based upon this data, negligible emission reductions would result from the use of Method 21 when inspecting equipment in acetic acid service. By using sensory methods, leaks are detected and repaired which would not otherwise require repair if an instrumental analyzer were used. Therefore, Eastman's proposal to use only sensory techniques to detect leaks from equipment in acetic acid service at its Columbia plant is acceptable to EPA Region 4. A similar alternative monitoring proposal has previously been approved by EPA Region 4 for the Eastman facility in Kingsport, Tennessee.

Leaks for the equipment covered by Eastman's alternative monitoring proposal are detected more readily with sensory techniques than with Method 21 due to the physical properties of acetic acid and the process conditions at the Columbia plant. Among the physical properties that make it easier to detect leaks of acetic acid using sensory techniques are a high boiling point, high corrosivity, and low odor threshold. Acetic acid has a boiling point of 118C, and its vapor pressure at 20C is 1.56 kPa. Because the operating temperature for the majority of the equipment covered by Eastman's alternative monitoring proposal is lower than the boiling point of acetic acid, leaks that do occur are typically present in the form of liquid drips that can be detected visually. Such drips tend to cause staining or rusting of metal components because of the corrosivity of acetic acid, which allows operators to detect leaks visually. The low odor threshold for acetic acid also makes it possible for operators to readily identify and locate leaks.

If you have any questions concerning the determination provided in this letter, please contact Mr. Keith Goff of the EPA Region 4 staff at (404) 562-9137.

Sincerely,

Beverly H. Banister
Director
Air, Pesticides and Toxics
Management Division

cc: Ms. Noushin Sprossel
Eastman Chemical Company