UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

July 9, 2021

Mr. Mark Bogle, Member
Board of Directors
Accoya USA, LLC
P.O. Box 1975
Kingsport, TN 37662

Dear Mr. Bogle:

This is in response to your letter, dated June 1, 2021, to the U.S. Environmental Protection Agency (EPA) requesting an alternative monitoring procedure for all fugitive equipment in acetic acid and acetic anhydride service at Accoya's acetylated wood manufacturing facility in Kingsport, Tennessee. The fugitive equipment is subject to the leak detection and repair (LDAR) standards of Title 40 CFR 60, Subpart VVa —Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006. We requested additional information from your contact, Mr. Stephen Gossett, Environmental Fellow of Eastman Chemical Company, on June 21, 2021, and received the information the same day. Based upon our review of the information provided, coupled with other available information, we have concluded that leaks from equipment in acetic acid and/or acetic anhydride service at Accoya may be more easily identified through sensory methods than by using USEPA Reference Method (RM) 21. Therefore, the company's alternative monitoring proposal is conditionally approved. Details regarding the AMP and the bases for our determination are provided in the remainder of this letter.

Accoya uses acetic anhydride as a raw material in the manufacturing of acetylated wood products at the Kingsport facility and recovers acetic acid from the manufacturing processes. The fugitive equipment [heavy-liquid and light-liquid pumps, gas/vapor, light-liquid and heavy-liquid pressure-relief devices (PRDs), gas/vapor and light-liquid and heavy liquid valves, and all associated connectors] in acetic acid and/or acetic anhydride service is subject to LDAR standards of Subpart VVa. Consistent with the bases of historically approved alternative monitoring determinations issued by the EPA, Accoya requests to utilize audio, visual, and olfactory (AVO) (sensory) monitoring in lieu of conducting RM 21 to determine if a leak is present because the physical properties of acetic anhydride and acetic acid present circumstances where leaks from equipment can be detected more readily using sensory methods than they can with RM 21. AVO monitoring is one of two LDAR monitoring techniques allowed by Subpart VVa. Under Accoya's proposal, equipment that contains or contacts a process fluid, where acetic acid and/or acetic anhydride comprise of at least 50 percent by weight of the VOCs contained in the mixture would be classified as being in acetic acid and/or acetic anhydride service. Accoya has requested to use this proposed AMP under provisions allowed by §60.13(i).

EPA Review of Subpart VVa LDAR Monitoring Standards

Under §60.482-2a(a)(1-2), each pump in light liquid service shall be monitored monthly to detect leaks and shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. Under §60.482-4a(b)(2), no later than 5 calendar days following a pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in §60.485a(c).

Under §60.482-7a(a)(1), each valve shall be monitored monthly to detect leaks by the methods specified in §60.485a(b) and shall comply with paragraphs §60.482-7a(b-e), except as provided in §§60.482-7a(f-h), 60.482-1a(c and f), 60.483-1a and 60.483-2a. Under §60.482-7a(c)(1)(i), any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected. Under §60.482-7a(c)(1)(ii), as an alternative to monitoring all of the valves in the first month of a quarter, an owner or operator may elect to subdivide the process unit into two or three subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. Under§60.482-7a (c)(2), if a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months. §60.482-7a(g-f) provides allowable exceptions to the monthly monitoring frequency requirement, subject to specific conditions, for any valve that is designated as an unsafe-to-monitor or a difficult-to-monitor valve and the owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

Under §60.482-8a(a), for pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service, if evidence of a potential leak is found by AVO monitoring, or any other detection method at pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service, the owner or operator shall either monitor the equipment within 5 days by the method specified in §60.485a(b) or eliminate the visual, audible, olfactory, or other indication of a potential leak within 5 calendar days of detection. Under §60.482-8a(b), if an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

EPA's Determination

Under §60.13(i), after receipt and consideration of written application, the Administrator may approve alternatives to any monitoring procedures or requirements of Part 60. On at least seven previous occasions, the EPA approved the use of sensory methods as an alternative to RM 21 for detecting leaks from equipment in VOC service, one of which specifically addressed fugitive equipment in acetic acid and acetic anhydride services (USEPA ADI Control Number: 0500121). The bases for these approvals included sufficient information demonstrating that leaks of acetic acid and acetic anhydride could be detected more readily with sensory methods than with RM 21.

The physical properties (i.e., high boiling point (BP), low vapor pressure (VP) high corrosivity, and low odor threshold (OTH)) of acetic acid (BP 118 C; VP 0.47 kPa @ 20C; OTH (0.48 -1.00 ppmv)) and acetic anhydride (BP 139 C; VP 1.56 kPa @ 20C; OTH (0.13 - 0.34 ppmv)) present conditions where AVO monitoring is successful in detecting leaks from equipment. Additionally, process conditions at Accoya make sensory leak detection methods preferable over instrumental methods because the operating temperature for most of the equipment covered by Accoya's alternative monitoring proposal is lower than the boiling points of acetic acid and acetic anhydride. Leaks that do occur are typically present in the form of liquid drips that can be detected visually. Such drips tend to cause discoloration of

metal components at the leak site, and discoloration of drip receptor surfaces below the leak. These circumstances allow operators to detect leaks using visual observation. Additionally, the low odor threshold for acetic acid and acetic anhydride makes it possible for operators to readily identify and locate leaks using olfactory techniques.

Therefore, in accordance with §60.13(i), the EPA conditionally approves Accoya's AMP. Since Subpart VVa requires pumps in light liquid service be inspected visually on a weekly basis, the EPA is requiring Accoya to monitor pumps in light liquid on at least a weekly (not monthly) basis. This conditional approval is based upon prior consultation with our Office of Air Quality Planning and Standards and our Office of Enforcement and Compliance Assurance and is consistent with similar approvals issued by our office. Please note that our approval does not alter Accoya's obligations to meet all other applicable New Source Performance Standard (NSPS) requirements, including, but not limited to the following NSPS General Provisions:

1. The requirement to maintain and operate affected facilities and associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions, per 40 CFR 60.11(d); and
2. The prohibition against concealing emissions which would otherwise constitute a violation of an applicable standard, including the use of gaseous diluents to achieve compliance with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere, per 40 CFR 60.12.

If you have any questions about this approval, please contact Tracy Watson at (404) 562-8998 or by email at watson.marion@epa.gov.

Sincerely,

KENNETH MITCHELL

Digitally signed by KENNETH MITCHELL
Date: 2021.07.09 14:05:43 -04'00'

For Caroline Y. Freeman
Director
Air and Radiation Division

cc: Emily Montgomery, Eastman